MODEL AIRPLANE NEWS

OCTOBER 1952 — 25 CENTS

50¢ DIE-CUT BALSA SHELF MODEL KITS

EASY ASSEMBLY • NO DIFFICULT CARVING

SPECIAL Value IN EACH KIT!

GIANT WING SPAN

"SWITCH to GUILLOW'S

– for VARIETY – for VALUE!"

Lou Andrews
1950-1951
NATIONAL STUNT CHAMPION
BARNSTORMER

Wing Span	47 in.
Wing area	470 sq. in.
Length	30⅞ in.
Engine	.23 to .35 disp.

$5.95

America's Champion stunt plane!

A NEW TRIXTER U-CONTROL MODEL

Tiny

All balsa pre-fab kit with fuselage molded to shape —very easy to assemble.

Wing span	12 in.
Engine	.035 to .049 disp.
Speed	30 to 45 m.p.h.
Overall length	12 in.

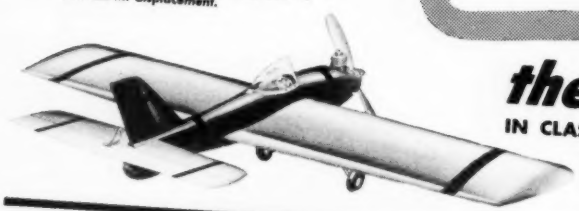
1/2A SPEED TRAINER AND SPORT FLYER

$1.50

"TINY FLIES OUT OF THE PALM OF YOUR HAND"

Baby BARNSTORMER

Completely prefabricated kit. A junior version of champion Barnstormer. 23½" wing span. For engines from .035 to .049 cu. in. displacement.



the best

IN CLASS 1/2A STUNT

$2.95

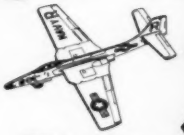
6 NEW JET FIGHTER FLYING MODELS 10¢ ea.

DIE-CUT BALSA PARTS — COLORFULLY PRINTED — EASY TO ASSEMBLE

F-89 SCORPION

RUSSIAN MIG-15

F7U CUTLASS


F2H-1 BANSHEE

F-86D SABRE

F-84F THUNDERJET

Six of the world's fastest jet fighters (including the Russian MIG-15 of Korean War fame) are available in this series. Very easily assembled from colorfully printed die-cut parts. Can be flown both indoors or outdoors—no special skill required.

SEE YOUR LOCAL DEALER FOR GUILLOW KITS
IF NOT AVAILABLE, SEND DIRECT TO FACTORY, ADDING 15¢ TO ALL MAIL ORDERS

PAUL K. GUILLOW, WAKEFIELD, MASS.

25¢ DIE-CUT BALSA SHELF MODEL KITS

No. Am. P-51 Mustang	Lockheed F-80 Shooting Star
Vought F4U-1 Corsair	McDonnell F2H-1 Banshee
Republic P-47 Thunderbolt	Republic F-84 Thunderjet
Curtiss P-40 Warhawk	No. Am. F-86 Sabre
Lockheed P-38 Lightning	Russian Mig 15
Lockheed C-69 Constellation	Vought F7U Cutlass
Boeing B-29 Superfortress	No. Am. B-45 Tornado
Sikorsky H-5 Transport	Boeing B-47 Stratojet
No. Am. T-28 Trainer	Northrop F-89 Scorpion
Convair B-36 Bomber	Grumman F9F Panther
Fairchild C-119 Packet	Martin B-57A Canberra
	Douglas AD-1 Skyraider

SPECIAL Value IN EACH KIT!

EASY ASSEMBLY — THE DIE-CUT PARTS GO TOGETHER LIKE MAGIC!

COMET proudly presents

2 SENSATIONAL $1.00 LINES

1 NORTH AMERICAN MUSTANG

The P LINE FLYING AND FLYING SCALE MODELS

When you see these "BIG DOLLAR" models with giant wingspans of 24" to 54", flown rubber-powered or adaptable for use with ½A engines—learn they're only a dollar—and watch these planes perform—it will be "Love at first flight!" These "Big Dollar" Flying Models represent a standard of value only Comet can offer!

P-4 GRUMMAN HELLCAT F6F

P-5 LOCKHEED LIGHTNING P38

P-12 SABRE JET F86D

KIT P-1 NORTH AMERICAN MUSTANG
KIT P-2 DOUGLAS A26
KIT P-3 REPUBLIC THUNDERBOLT
KIT P-4 GRUMMAN HELLCAT F6F
KIT P-5 LOCKHEED LIGHTNING P38
KIT P-6 CLIPPER, JR.
KIT P-7 PEPPER
KIT P-8 TAYLORCRAFT 54" WINGSPAN
KIT P-9 AERONCA 54" WINGSPAN
KIT P-10 PIPER CUB 40" WINGSPAN
KIT P-11 GULL
KIT P-12 SABRE JET F86D

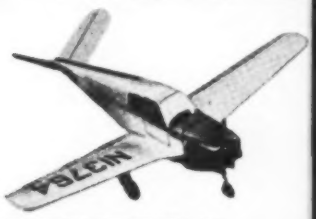
The M LINE FLYING SCALE STRUCT-O-SPEED MODELS E-Z TO BUILD

These "E-Z-to-Build" STRUCT-O-SPEED models are prefabricated in the fullest sense of the word—put themselves together *just-like-that!* Rubber-powered; spring-type shock absorbing landing gear. Shaped all-balsa Hali-O-Wing, lots of other features.

KIT M-1 TAYLORCRAFT
KIT M-2 PIPER CUB
KIT M-3 AERONCA
KIT M-4 BEECHCRAFT BONANZA
KIT M-5 BELLANCA CRUISAIR
KIT M-6 ERCOUPE

M-6 ERCOUPE

M-4 BEECHCRAFT BONANZA



—and 2 OUTSTANDING GAS MODELS

Designed for ½A engines!

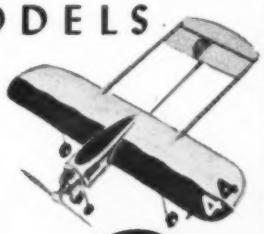
KIT NO. T-4 $2.50

the FREE-FLIGHT
"PACEMAKER"

- Easy to build and fly—completely PREFABRICATED!
- Fuel-proof plastic cowling!
- All parts neatly cut out—ready to use!
- Decal emblem and numerals!
- All necessary finished metal parts Dethermalizer equipped!

the U-Control
LITTLE SCHMOE

A prefabricated die-cut job with completely finished parts that fit together with amazing ease. New wide landing gear and nose gear mean safer landings. Simple enough for the beginner, yet plenty interesting to the experienced model builder.



$1.50 KIT NO. T-17

COMET MODEL HOBBYCRAFT, INC.
501 West 35th Street • Chicago 16, Illinois

MODEL AIRPLANE NEWS

Serving Aviaton 24 Years

OCTOBER 1952 VOL. XLVII—No. 4

CONTENTS

CONSTRUCTION

Gyrator 9
Aeronut 16
Classy Canard 20

NEWS

Scrap Box 4
Planes in the News 5
1952 Wakefield 34
1952 Nationals 38
AMA News 40

ARTICLES

Pee Wee Patrol 14
We Test The Yak and The Mustang 22
For the RC Fan 26
The Jenny, Part I 32

FEATURES

Man at Work 2
Air Ways at the Mirror Meet . . 18
Design Detail 24
The Jenny Masterplan . . . 30
Conrad 47

JAY P. CLEVELAND, President and Publisher
WILLIAM WINTER, Editor
WITTICH HOLLOWAY, Art Director

Contributing Editors: David Anderton, Robert C. Hare, Jim Saftig, Joseph Nieto, Harry Williamson

Executive and Editorial Office: 551 Fifth Avenue, New York 17, N. Y.

Advertising Manager, N. E. Slane, 551 5th Ave., New York 17; West Coast Adv. Mgr., Justin Hannan, 4068 Crenshaw Blvd., Los Angeles 43, Calif.

Editorial and Business offices: 551 Fifth Ave., New York 17, N. Y. Published monthly by Air Age, Inc., 1140 East West Highway, Silver Spring, Maryland. Jay P. Cleveland, President and Treasurer; K. P. Johnson, Vice Pres.; G. K. Johnson, Sec. Entered as second class matter Feb. 1951 at the post office at Silver Spring, Md., under the act of March 3, 1879. Additional entry at New York, N. Y. Price 25c per copy in U. S. Subscription Rates — Within U. S. only: 1 yr. $2.50; 2 yrs. $4.75. In Canada: 1 yr. $3; 2 yrs. $5.75. All other parts of the world: 1 yr. $3.50; 2 yrs. $6.75. Change of Address — Send to MODEL AIRPLANE NEWS, Subscription Department, 551 Fifth Avenue, New York 17, New York, at least one month before the date of the issue with which it is to take effect. Send old address with the new, enclosing if possible your address label or copy. The Post Office will not forward copies unless you provide extra postage. Duplicate issues cannot be sent.

Copyright 1952 by Air Age, Inc.

by William Winter

▸ With Sweden's second successive win in the Wakefield, the situation certainly seems to have fallen into a pattern. If we count Ellila's two consecutive wins in 1949 and 1950, the Scandinavian countries have won four years in a row. From this, it is time that we drew certain conclusions. It isn't luck. If there is any doubt of that, consider that the second place was won by Sweden, that Ellila took third for Finland, that Lustrati and Italy were among the first five as usual. For the most part, these ships are boxes, not particularly light in their construction, but using gears. This amazing series of wins began when Ellila was able to journey to Britain, after Chesterton took the trophy back from America with his *Jaguar*. What would have happened had the Scandinavian countries been able to attend regularly in other years? What is going to happen?

▸ Speaking of the Wakefield, when will modeling in the more important events get onto a true international plane? Outside of the praiseworthy push of a small but hard core of Wakefield enthusiasts, the U.S. seems to ignore all other activities. There is already something that passes for an international free flight contest and a certain amount of control line competition between teams of various countries. One wonders when the world will get around to holding all these events, at the same time, and in one locality. It would make considerable sense for each country to send a team consisting of members skilled in various events. Probably these would be specialists. Maybe two would be Wakefield men, two in free flight, and two control line. As it stands now, we—and lots of other people—cannot finance more than one team, if that much. If six men go to Sweden for the Wakefield, there is no use of thinking of anything else. The Wakefield is a fine event. Wakefield models are terrific. So are the guys who fly them. But letting rubber dominate everything else, the Wakefield amounts to an Olympics devoted solely to the 100 meter dash. Free flight, control line, and rubber, if held simultaneously in the country that had won the year before, would be a true model Olympics.

▸ How strong is a thermal? Have heard of *Rudder Bugs* that went out the top, out of sight, in a thermal. Once saw a six-foot rc that weighed twelve pounds disappear so high and so fast that there was no use starting a car. So last Sunday took in the *Screamin' Demons'* meet, on Long Island, for rubber, free flight, scale, and rc. One modeler turned loose a Fox-powered, five-foot rc that weighed 7-1/2 pounds. No radio response. MAN at Work took off with a bystander to give chase. We were practically under the ship when it came down, five miles away, and over an hour later. At times the ship was a shapeless speck high in the sky. The glide was a fast right spiral so figure what it takes to hold up such a plane in such trim and you'll know how hot a thermal can get.

▸ Two weeks ago attended the *Gas Monkey's* meet held in the same locality. What was seen at both meets would give pause to the most ardent enthusiast. The caliber of flying at the *Gas Monkey's* affair was as bad as it used to be in 1936-37. Expert opinion blames this on the lack of flying sites. No place to adjust. So the guys hope to adjust on their first and second flight. If they don't bash the job on the first flight, they might do something on the second. Or the third, for sure, they hope. The *Screamin' Demons' meet* showed some better flying. Presumably, the survivors of the *Gas Monkey's* frolic were better adjusted. Last year, the *Screamin' Demons'* meet was an interesting affair. ROW tank, Clipper cargo, payload, what have you. Well attended. This year, entrants plus spectators, probably did not outnumber the people at some of the wintertime flying sessions. Was it the heat?

(Continued on page 8)

announcing 2 NEW OK CUBS

For PRICE, POWER, and PERFORMANCE

10TH ANNIVERSARY OK 1937 1952

A Complete Line of PROVEN Miniature Engines and Accessories

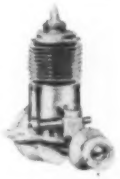
O. K. GLOW FUEL
Pint 85¢

O. K. PLUGS
Short or long — 39¢

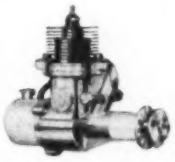
O. K. CUB .049
POWER KIT
"Assemble-it-Yourself"
$4.95

O. K. CUB .049
$5.25

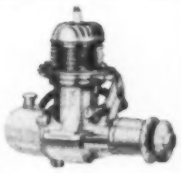
O. K. CUB .074
$5.95



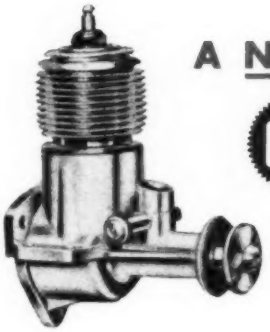
O. K. CUB .099
$6.95



O. K. MOHAWK CHIEF
$9.95



O. K. HOTHEAD
$10.95



A NEW DISPLACEMENT!

OK CUB .14

Produced at the request of top plane designers! Opens an entirely new field for the hobbyist. A light-weight engine with the extra power so often needed. For free flight, control line and radio controlled flying.

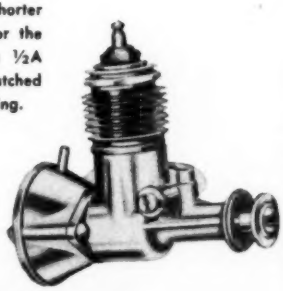
CLASS A

Displ.	.149	RPM	3,000 to 15,000
Bore	.600	Weight	2¾ oz.
Stroke	.530	Price	only **$8.95**

A NEW CUB FOR THE EXPERT!

OK CUB .049X Combination Package

Companion to the famous .049 Cub. Provides higher output due to shorter stroke, larger bore, lighter weight. Designed for the advanced hobbyist. The top performer in the ½A Class. Package includes assembled engine, matched prop, extra rear cover, fuel tank, neoprene tubing.



CLASS ½A

Displ.	.049
Bore	.420
Stroke	.360
RPM	3,000 to 15,000
Price	only **$6.25** Complete

O. K. COMBINATION PACKAGES

CUB .039	$4.95
CUB .049	$5.75
CUB .074	$6.75
CUB .099	$7.75

SEE YOUR DEALER . . . Or write us direct

HERKIMER TOOL & MODEL WORKS

88 Harter St. Herkimer, N. Y.

Scrap ...Box

by Jim Saftig

Separate the men from the boys is the big rhubarb this month. If you work up a fit, cool off with the world wide news roundup.

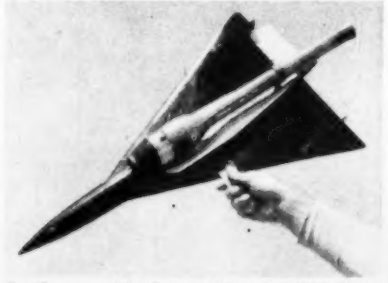
Once in a while, we all deserve to get told off. Here's one for any and all of you guys the shoe fits. The Plymouth Company came to the rescue of modeling sometime ago by serving up on a silver platter the swellest array of trophies and cash that anyone could want. It ran into difficulties now and then and didn't pretend to know all about how to run a contest. The Plymouth Company and its dealers have come along swell, but some of the modelers (not all of them by any means) are the most selfish, irresponsible, and unappreciative bunch of fellows it has ever been our misfortune to run into. The constant bickering, griping, and display of poor sportsmanship is disgusting. Let's get in there next year and give the Plymouth Company the co-operation it deserves. It is doing a swell job and we need its support. Let's give it some good ships to look at and go all out for a crowd at all eliminations.

* * *

We've again been giving quite a bit of attention to the A.M.A. stunt pattern, and the word STUNT is now slightly out of place in our estimation. Had quite a few chats with the acrobatic enthusiasts and probed around a bit about the present set-up. Mighty interesting! Caught quite a few "fer and agin" the present deal, but the "fers" had it by far, to our notion. Check the pilot's viewpoint, and we feel that we still fall in that category; year after year we do nothing but level flight, inverted flight, loops, outside loops, and so on. Get's darned monotonous. We'll grant you that a flock of the lads need plenty of practice to execute even these stunts properly, but the old tiresome effort is still there. Don't think that we're picking the pattern apart just to be clacking our teeth. The present "deal" was carefully thought out and was a definite need for the stunt flyer of yesteryear. Speaking of the "yesteryear" pilot, talked with Ken Aymar, whose very sound judgment and abilities we respect highly. Ken definitely goes with the pattern as is. The "maestro" has a good defense for it too. He insists that we have a good sound plan as is. Finding judges capable of learning the pattern and what to watch for is becoming harder to do as time goes on. Changing the pattern would only add havoc to the poor confused judge's mind. Getting back to the "yesteryear" pilot — this wild and woolly daredevil used to write out his stunt pattern, submit it to the judges, and then take off into the darndest conglomeration of hair-raising acrobatics ever squeezed from a model. A bit rough on the judges, but spectators and contestants loved it. The stunt circles used to hold the spotlight. Now the pattern is the same for Jr., Sr., and Open contestants. Spectator interest? Phooie! We've heard the comment too many times, "They all do the same thing, let's go." The only spectators watching the stunt event are the other contestants waiting their turn to fly the monotonous pattern.

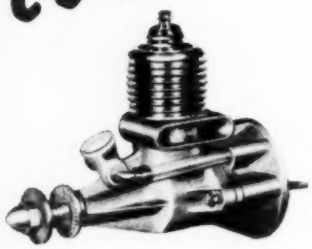
A parting shot at the present pattern. Let's eliminate the amount of points given for inverted flight and chop out the level flight, vertical climb, and dive. Might re-work the A.M.A. illustration per the vertical, horizontal, and overhead eights. Take the horizontal eight—it states in the book that a horizontal figure eight should be done within one-half lap, with the control lines at an angle of 60 degrees or less to the ground at all times during the maneuver. Both ends of the horizontal eight should be round circles of the same size. At the point of intersection, model should be in a vertical position. Any figure eight that has mushing, wobbling, etc., etc. Get the official book and note the statement that ". . . at the point of intersection, model should be in a vertical position." This is a definite statement and should be regarded per point plan BUT check the diagram and notice the intersection of the figure *(Continued on page 49)*

Harold Ledington's Class I, F.A.I. record job, did 56 mph. Record is now up for FAI homogulation.



Another record for homogulation by FAI is Merle Hoyt's Delta jet, 138 mph. At the Miramar Strip.

DARE TO COMPARE



New 1953 Royal Baby Spitfire .049

$4.45 Complete

Why experiment with an unknown? 350,000 "Baby Spitfires" sold

Why experiment with an unknown? 220,000 "Spitzy" engines sold

Why experiment with an unknown? 190,000 Royal engines sold

- HOTTER IGNITION
- IMPROVED CARBURATION
- HIGHEST COMPRESSION RATIO
- SIDE PORT EXHAUST
- HIGHEST R.P.M.
- HIGHEST DISPLACEMENT TO WEIGHT RATIO
- .049 DISPLACEMENT
- SMALLER AND MORE COMPACT

MEL ANDERSON Manufacturing Co.

1547 W. 16th St., Long Beach 13, Calif.

PLANES IN THE NEWS

"Old" and new, a *Sabre* in formation with Douglas *Skyrocket*, known to have surpassed 1,300 mph. Note the open dive brakes in the *Sabre*.

by DAVID ANDERTON

▼

What is the truth about the Russian MiG jet interceptor? This is the dope based on an analysis of a shot-down job. A rundown on Starfire, too.

About two years ago a few sweptwing jet fighters, wearing the red star of Soviet Russia on their wings and tails, whistled up from fields across the Yalu river in Manchuria to challenge the supremacy of the United Nations air arm in Korea.

To some people this was a tremendous surprise. Russians weren't supposed to have any first-class jet fighters. What they had were copies of German designs. The engines were copied from the British. But to some of the fraternity of recognition enthusiasts, the *MiG-15* was no surprise. At the risk of being accused of sensationalism and non-factual reporting, they had written descriptions, drawn pictures and reproduced grainy photographs of a sweptwing jet fighter which was designated after the Russian design team of Mikoyan and Gurevich. Some of these reports were awfully wrong; some were extremely close to the truth.

And they all started one thing—the *MiG* panic. For months, every time you picked up an aviation magazine, you read about the *MiG*. Korean air war veterans talked about it—disparagingly and respectfully. Blast followed blast—the *MiG* was much better than anything we could put into the air; the *MiG* pilots were inferior to the clean-cut, clear-eyed American youths; cannon were better than machine guns.

All this was based on supposition, report, hearsay. Because outside of people in Russia and the satellites, nobody had gotten a real close look at a *MiG*.

Sooner or later somebody was bound to. The spotters kept watch for ground wreckage of one of the craft, and it has been surmised that lots of small pieces of engine, for example, were picked up this way. Then one day a *MiG* pilot made a fair landing in the flatlands on the southwest coast of Korea, up near the Yalu. The Royal Navy spotted the ship and radioed location. Shortly the US had a copter in there with salvage crews and a combined operation finally moved the wreckage out.

Then the pieces went to the United States for study. Pratt & Whitney engineers—because of that company's licensing agreement with Rolls-Royce for the *Nene* engine, modified by the Russians for the *MiG*—got the engine to work over. Cornell Aeronautical Laboratory, Wright-Patterson AFB technicians and other research labs got bits and pieces and the tedious analysis began.

To *Aviation Week* magazine goes the credit for presenting the first authentic, official evaluation of the *MiG-15*, Russia's retiring champ. In the July 7 issue of the magazine appeared the results of the AF's dissection of the speedy little fighter. And these notes which follow are based on *Aviation Week's* report to the industry.

Performance—The *MiG* is a fighter-interceptor and has the sea level rate of climb to go with it. Off the deck this little craft whips up at 10,400 fpm. Maximum speed of the plane is around the official mark of the world's speed record now held by the *F-86A*—a neat 672 mph.

Weight of the airplane is 12,500 lb. The powerplant is a turbojet designated the *RD-45*, developed from (not copied, please) the Rolls-Royce *Nene*. Thrust rating is 6,000 lb. static at sea level with no water injection; with water injection, this is upped to 6,750 lb.

Wingspan of the *MiG* is 33 ft. The sweepback angle is a large 42 degrees, deviating from the accepted American standard of 35 degrees.

Fuel capacity is about 330 gallons internal; with the quoted figure of fuel consumption as 1.14 lb. per lb. thrust per hr., this gives about twenty minutes' worth of full-throttle operation.

Offensive armament of the *MiG* is a pair of 23mm. cannon and a single 37mm. cannon.

The particular *(Continued on page 39)*

Lockheed's "electronic" interceptor fighter will fire 24 2.75 in. rockets from nose. Doors retract.

AMERICA'S HOBBY CENTER, INC.

SAN FRANCISCO · DENVER · CHICAGO · NEW YORK · BROOKLYN · NEW ORLEANS

ESTABLISHED 1931

21ST YEAR

The only model store that gives you . . .

1952 LARGEST MODEL & SUPPLY FIRM IN AMERICA

NO EXTRA CHARGE!!

50 items with gas engines, incl.:

(with diesel or glo engines, all needed items are given). Items include • Quality Coil • Everlast Condenser • 3-way Plug Wrench • Hi-Tension Wire • Shielded Ignition Wire • Insulated Coil Holder • Correct Size Prop • Presto Engine Starter • Complete Instructions • Battery Box • Slide Switch • 24 pg. Engine Manual • 4 Mounting Bolts • 4 Mounting Nuts • 4 Wiring Lugs • Spark or Glo Plug • Identification Tag Book • Motor Cover • Speed Indicator • Trouble Shooting Chart • No. 70 Oil • Membership in Modelcrafters of America • A M C Guaranty • 128 pg. Giant 2-Color Catalog • Plus Free Postage, Packing and insurance if ordered by mail.

12 items with gas planes incl.:

• Correct Rubber Wheels • Pro All-Metal Knife • Giant Construction Manual • Speed Indicator • Log Book • Complete Full Size Plans • Insignia • Membership in Modelcrafters of America • 128 pg. Giant 2-color Catalog • Plus Free Postage, Packing and insurance if ordered by mail. (Premiums on Planes selling at over $1.50 only)

1. One year subscriptions to model Airplane News, Air Trails and Flying Models or its equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. Unused purchases exchangeable within 14 days.
4. No postage or packing charges—we insure safe delivery ANYWHERE IN THE WORLD.
5. 24 hour service. Mail addresses in Chicago, San Francisco, Denver and New Orleans which will airmail your orders to our N. Y. office for prompt shipment.
6. Most complete model stock in America—gas, rubber, solids, etc. if it's advertised, we can usually supply it.
7. Competent understanding of your modeling problems.
8. No "minimum" orders. Any order is welcome.
9. With engines. 50 ITEMS WORTH OVER $7.00 AT NO EXTRA COST. SEE BOX ON LEFT.
10. Rubber wheels, knife, etc., etc., with gas planes. 12 ITEMS WORTH $3.50 AT NO EXTRA COST. SEE BOX ON LEFT.
11. Membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES. OVER 90,000 members.
12. Illustrated giant 2-color 128 page catalog with every order.

N. Y. CITY MODELERS

TWO STORES TO SERVE YOU!

Largest stock in the country at either of our two stores . . .

156 W. 22nd St., New York City

1065 Broadway, Brooklyn, N. Y.

Experts on hand to help you with your problems. Complete stock including engine parts and service at both stores.

Copyright 1951 America's Hobby Center, Inc.

ENGINES

GLO ENGINES

Atwood Wasp (FF)	(AA)	6.75
Atwood Wasp (U-C)	(AA)	6.50
Baby Spitfire	(AA)	8.45
Cameron 19	(A)	9.95
Cox .09, .15, or .19	(A)	8.95
Forster F 29 Glo	(B)	14.25
Forster F 51 Glo	(C)	14.25
Fox 29	(B)	14.95
Fox 35	(C)	14.95
Fox 59 Stunt	(D)	29.95
Infant Torpedo	(AA)	5.50
K & B Glo Torp 29	(B)	15.95
K & B Glo Torp 32	(C)	15.95
K & B Torpedo 049	(AA)	6.75
K & B Torpedo 19	(A)	13.95
McCoy 9	(A)	7.95
McCoy 19 Sport	(A)	9.95
McCoy 19 R.H.	(A)	10.95
McCoy 29 Sport	(B)	11.95
McCoy 29 R.H.	(B)	14.95
Mohawk Chief Glo	(B)	9.95
Ohlsson 23 Rv Deluxe	(B)	13.95
Ohlsson 29 Glo	(B)	13.95
Ohlsson 33 Glo	(C)	13.95
Ohlsson 29 Marine	(B)	14.95
Ohlsson 60 Glo	(D)	13.95
O.K. Cub .099	(A)	6.95
O.K. Cub .099 Pkge.	(A)	7.75
O.K. Cub .020	(AA)	4.95
O.K. Cub .049	(AA)	6.25
O.K. Cub .049 Pkge.	(AA)	6.75
O.K. Cub .049X Pkg (AA)		6.25
O.K. Cub .074	(AA)	6.95
O.K. Cub .074 Pkge.	(AA)	6.75
O.K. Cub .049 Rx	(AA)	6.75
O.K. Cub 14	(A)	8.95
O.K. Hothead Glo	(B)	10.95
Royal Baby Spitfire Pkge.	(AA)	5.95
Royal Baby Spitfire	(AA)	5.45
Royal Spitfire	(AA)	6.95
Spare Plug	(AA)	0.95
Spitzy	(AA)	4.45
Spitzy Senior Pkge	(AA)	8.45
Veco 29	(B)	14.95
Veco 31	(C)	14.95

IGNITION ENGINES

Dennymite	(C)	6.95
Hornet 60	(D)	10.95
Jadco Kit	(B)	6.95
K & B Torpedo 24	(B)	16.50
McCoy 19 R.H.	(A)	10.95
Mohawk Chief	(B)	10.95
Ohlsson 23 RV Deluxe	(B)	12.95
Ohlsson 23 Rotary	(B)	14.95
Ohlsson 29	(B)	14.95
Ohlsson 60 Luxe	(D)	14.95
O.K. Hothead (Sup 29)	(B)	12.95
Panther P-30	(B)	14.95
Rann	(B)	8.75
Rogers 29	(B)	9.95
Spitfire	(B)	24.95
Super Cyclone Dual	(D)	13.95
Super Cyclone	(D)	12.95
Thor	(B)	9.95
Thor Kit	(B)	6.95
Wasp Twin	(D)	29.95

JET ENGINES

Dyna-Jet Redhead	80.00
Jetex 50	1.95
Jetex 150	4.95
Jetex 350	8.95

ELECTRIC MOTORS

Dynamite	1.98
Imp Outboard	3.50

ENGINE PARTS!!

EVERY part for EVERY ENGINE listed on these pages is IN STOCK at America's Hobby Center. Send today for the parts you need to keep your engine in flying condition.

HO RAILS

Did you know A.H.C. now carries a complete line of HO? Send 25c for catalog.

FREE-FLIGHT PLANES

Baby Phoenix 26" AA	1.75
Bootstrap 40" AA	2.50
Buccaneer S Special 54" B	5.95
Brigadier R.C. 38" AA	1.95
Champion 36" A-AA	2.50
Civy Boy 24" AA	1.95
Civy Boy 31" AA	1.95
Commander 36" AA	2.75
Dakota 24" AA	2.75
Folly 22" AA	1.75
Fu-Bar 36" AA	1.75
Fu-Bar 65 65" B-C	6.95
Hawk 27" AA	1.50
Jasco R.C. Master 49 A	9.95
Jasco Rival 44" AA	2.75
Jasco Streak 32" AA	1.95
Junior Phoenix 36" A	2.25
Lil Rascal 27" AA	1.50
Lift Master 34" AA	2.25
Little Twister 30" AA	1.50
Lil Rascal 27" AA	1.50
Livewire R.C. 48" AA	6.95
Luscombe Sedan 26" C-D	7.50
Luscombe Silvaire 42" A-B	3.00
Mini-Hogan 36 54" AA	1.95
Mini-Hogan 45 45" AA	2.95
Navaro 36" B-C	3.50
Nomad 18" AA	1.95
PAA Master 35" AA	2.50
Powerman 32" AA	2.50
Phoenix Flash 32" AA	1.75
Phoenix Skiver 31" AA	2.25
Powerhouse 32" AA	1.75
Powerhouse 41" A	2.95
Powerhouse 56" B	4.95
Profile Powerhouse 24" AA	1.00
Sandy Hogan 70" B-C	4.95
Sid Free 34" AA	1.95
Shadow 32" AA	1.95
Sioux 36" AA	2.75
Skylark 31" AA	2.00
Sniffer 29" AA	1.75
Spitfire 36" AA	2.95
Spitfire Acc 36" AA (incl. engine)	5.95
Sport Prince 35" AA	1.95
Super Brigadier 58" B	4.95
Super Bug 52" A-B	4.95
Taylor Cub 55" AA	2.95
Trister Cub 29" AA	2.00
Trister Pixie 28" AA	1.75
Yank 25" AA	1.50
Zeek 33" AA	2.50
Zeebo 33" AA	2.50
Zeke 50" A-B	4.95

U-CONTROL PLANES

A12 Twin 25½" AA	2.98
Aerobat (Whip)	5.95
Aerosea Sedan 22" AA	1.98
Air Racer AA-A	2.95
A. J. Fireball 36" B-C-D	6.95
Aeromite 17" AA	5.95
All Amer. Trainer 21" AA	1.75
All-Amer. Stunt Trainer Jr. 26" A-AA	3.75
All Amer. Stunt 26" A-B	4.95
All Amer. Sr. Stunt 51" B-C	8.95
Baby Ace 18" AA	3.50
Baby Barnstormer 23" AA	2.98
Baby Cinch 30" B-C	5.95
Baby Clown 22" AA	1.50
Baby Di-Doe 21" AA	1.75
Baby Era 18" AA-A	2.50
Baby Era Bipe 18" AA	2.50
Baby V Shark 20" A-B	2.98
Barnstormer 47" A-B	4.95
Bat 32" C-D	2.98
Bearcat 35" C-D	4.98
Bee 24" B	3.95
Beechcraft Half A 16" AA-A	2.95
Ben Howards Pete 30" B-C-D	5.95
Bipe Stunt Twin 22" B-C-D	3.95
Boeing P26A 18" AA	2.95
Boeing P26A 28" A-B	6.95
Bonanza 36" B-C	4.95
Cessna 22" AA	1.95
Cessna 36" B-C	3.95
Chief 51½" A-B-C-D	7.50
Combat Sky Box 26" A-B	2.95
Corsair 17" A-AA	2.95
Curtis P40F 20" AA	3.95
Di-Doe 22" A-B-C	3.95
Dimco Spl. 24" C-D	7.95
Douglas Navy Skyraider (Plastic) 12½" AA	3.00
Duke 19" AA	1.45
Duster 15" AA	1.95
Duster 15" AA (Incl. Engine)	3.95
Dynamic 28" A-B	3.95
F4B Supersonic 20" AA	1.95
F4B Supersonic (Incl. Engine)	3.95
F6E Supersonic 28" AA	1.95
F6E Supersonic (Incl. Engine)	3.95
Fire Baby 19" AA	1.50
Fireball (Incl. Engine)	3.50
Flip-Flop, Jr. 24" B-C	3.50
Flivver 24" B-C (all alum.)	3.95
Flying Clown 28" A-BC	1.95
Focke Wolfe 190 17" AA	1.95
Freshman 9 24" A	2.49
Freshman 19 30" A	3.95
Freshman 29 36" B	5.95
Great Lakes Trainer 27" A-B	4.95
Guided Star 24" A-B-C	3.95
Guided Starlet 24" AA	3.75
Hell—Razor 14" A	3.95
Hell—Razor 16" B	6.95
Hell—Razor 18" D	6.95
Hell—Razor 8" AA	2.00
Howard Ike 20" AA	3.00
Infant Wagon 20" AA	1.95
Junior Stunt 9 21" AA-A	3.45
Junior Stunt 19 24" A	3.98
Junior Stunt 29 40" B	4.98
Key 29" B-C	5.95
Key—Det 18" AA-A	2.98
Kingpin 28" A-B	5.95
Knockout 16" AA	2.50
Lil Duper Zitch 42" A-B	3.95
Little Ace 16" AA-A	1.98
Little Bipe 16" AA-A	1.98
Little Devil 18" AA-A	1.50
Little Mustang 18" AA	1.95
Little Sabre 16" AA	1.98
Little Schmoe 17" AA	1.50
Luscombe Sedan 25" AA	1.95
Maverick 24" AA-A-B	1.98
ME 109 Jr. (P.D.Q.) 20" AA	1.50
Minnow 28" A-B-C	5.95
Mini-Zitch 19" AA	1.25
Monocoupe 36" B-C	4.95
Mr. Mulligan 22" B-C (Sterling)	4.95
Mustang 37" A-B (Berkeley)	5.95
Mustang P51 19" AA (Airtone)	1.95
Mustang P51 36" B-C (P.D.Q.)	2.95
Mustang (Sterling) A-B-C 38"	2.95
Mustang (Veco) 48" B-C	4.95
Mustang Jr. (P.D.Q.) 20" AA	1.50
New Era 28" A-B	4.95
N.A. P51 18" AA (Comet)	1.98
No. Amer. T6 (SNJ) 31" A-B-C	4.95
Pacific Ranger 28" AA	3.95
Papoose 32" A	3.95
Pee Wee Pup 17½" AA	1.95
Pee Wee Pursuit 18" AA	1.25
Peter Pan 24" AA	1.50
Phantom Era 28" A-B	3.95
Pinto Cruiser 22" AA	1.98
Piper Cub Trainer 23" AA	1.98
Piper Vagabond 26" A-B-C	3.95
Pitts Special 28" A-B	4.95
Polish Fighter 36" B-C-D	5.95
Powder Puff 18" A-B-C	3.95
Primer 18" AA	1.40
P-T Trainer 36" A-B	3.95
Puddle Jumper 19" AA	1.98
Quest 30" B	4.95
Ringmaster 42" B-C	4.95
Ryan S. T 36" B-C	5.95
Scientific 2 in 1 Kit 18" AA	2.95
Scout 24" AA	2.50
SE 5 17" AA	2.50
SE 5 32" C-D	8.95
Senior 9 27"	5.45
Senior 19 34"	3.98
Senior 29 39"	4.98
Senior Puddlejumper 28" A-B	1.95
Sharpy 47" C-D	6.95
Skyleader 16" A-AA	2.50
Sophomore 9 28" A	2.49
Sophomore 19 32" A	2.98
Sophomore 29 39" B	3.98
Speedster 12" AA	2.50
Speedwagon 20 12" A	3.98
Speedwagon 50 18" C-D	8.95
Spitfire 20" AA	2.95
Sporting 36" A-B-C	3.98
Super Stunt Runt 20" A	2.25
Sweet Chariot 18" AA-A	2.50
T-28 N.A. Trainer 20" B-C	5.95
Taylorcraft 36" A.B.C.	2.95
Thunderbolt 20" C-D	4.95
Tiny 12" AA	1.98
Trail Blazer 24" B-C-D	3.95
Trister Babe 20" AA	1.25
Trister Invert Jr 40" A-B	3.95
Trister Prof. Trainer 32" A-B	3.95
Trister Profile 32" A-B	2.50
Trister Profile 36" B-C	3.50
Trister Twin Profile 47" B-C	6.95
Typhoon 17" AA	2.98
Vampire 40" B-C	4.95
Viking 51" C-D	6.75
Vixen 21" AA	1.98
Warn 33" B-C	4.95
Warhawk 22½" B-C	5.95
Warrior 36" A-B-C	4.95
Wee Duper Zitch 36" AA	1.95
Wee Willie 18" AA-A	1.95
Whirlaway 11" AB	3.98
Wing Ding 16" AA-A-B	2.25
Wing Dingus 16" AA	2.25
Yak (P.D.Q) 36" B-C	3.95
Yak Jr. (P.D.Q.) 20" AA	1.50
Yak (Sterling) A-B-C	2.95
Yank 23" AA	1.98

RADIO CONTROL PLANES

Brigadier RC 36" AA-A	1.98
Jasco RC Master 49" AA-A	9.95
Jasco RC Streak 32" AA	2.95
Buccaneer R Special 54" B	3.98
Buccaneer C Special 72" C	5.95
Super Brigadier 58" B-C	4.98
Super Buccaneer 90" C-D	10.95
Super Buccaneer Jr. 106" D-E	12.50
Luscombe Sedan 76" C-D	7.50

RADIO CONTROL

Aerotrol Kit	22.95
Super Aerotrol Receiver Kit	13.95
Super Aerotrol Transmitter Kit	21.95
Aerotrol Escapement Kit	2.95
Citizenship Receiver	29.95
Citizenship Transmitter	39.75
Citizenship Escapement	9.95
ECC Transmitter (with crystal control)	39.95
Same in kit form	27.50
Squaw 39" A-B-C	5.75
Sr. 22" AA	1.95
Streamliner 35" B-C-D	4.00
Stunt 16" AA	1.95
Stuntmaster 40" B-C	6.95
Stuntwagon 30 64" B-C	4.95
Stuntwagon 40" B-C	7.50
Super Clown 36" B-C	3.95
Super Duper Zitch 42" C-D	4.95
Super Knock-Out 24" A-B	3.50
Super Squirt 21" (Jet)	5.95
ECC Transmitter (with crystal control)	39.95
Same in kit form	27.50
ECC Transmitter	19.95
Same in kit form	19.95
ECC Receiver 950A	18.95
ECC Receiver 961	19.95
ECC Escapement	6.00
ECC 5A Relay	2.50
5AS Transmitter Tube	3.50
XFG1 Receiver Tube	3.50

BURIED IN THIS AD

are most of the new items. Sometimes there isn't time or space to include them. But, if available, we have it.

ACCESSORIES

PROPELLERS

Rite Pitch or Super Stunt 6"-3, 8½"-4, 6"-3, 4, 6p. 7"-3, 4, 6 p. 15 8", 9", 10" in 4, 6, 8 pitch ..... .25
11", 12" in 6, 8 pitch ..... .35
13", 14" in 6, 8 pitch ..... .50
Scamper Plastic 8½" 2p., 8" 4p. 25., 9" 6p., 48 10" 10p., 11" 8 p., 65
Super Spl. 8", 9", 10" in 4, 6 or 8 p. ..... .20
Vare 8½" 3p. 6" 3p. 4p. 7" 4p. 5p. 6" 5p. 6p. 9" 6p. 7p. 8½"—10½", 7"-8 p.—10½", 9"-6 p. ..... .50
Kaynee R/S, 8½,4, 6/3, 6/4, 6½-10p, 7,4—20p ..... .50
Also Ohlsson, Flo-Torque, Power, Top Flite, Tornado, Testors, Berkeley.

METAL GAS TANKS

Dale Stunt Tanks—All Sizes 60
#1—1½x1¼x2¾, #4—1¾x1¼x3¾, #2—2¼x1¼x3¾, #5—1¾x1¾x3¾, #3—2¼x1¾x3¾, #12—1¾x1¾x5¾, #10—2¼x1¾x4¾
Fromm: 1¼x1¼x3 or 4oz. or ver. 80
1¼x1¼x3½ Sq. 80
1¼x1¼x3½ Wedge 80
1¼x1¼2¾, ½ Rnd Stunt 80
Berkeley: AA—50, A—75
B—75, C—85, D—85
Pylon Plastic: Small 70, Medium 90, Large 1.25
Also Macco, Acme, etc.

IGNITION COILS

O.K. ..... 1.50 Rogero 2.00
O.K. Twin .. 4.00 Wico 1.95

SPARK & GLO PLUGS

Champion Glo V, V2, V7 ..... .75
Champion V3, V32, V81, V82 ..... .50
McCoy Hot Point ..... .65
Ohlsson Glo (V, V2 or AA) ..... .60
O.K. Glo-plug (V2 or V3) ..... .60
K&B V2, V3 &b; Everglo ..... .75

IGNITION ACCESSORIES

6 ft. Hook-up wire ..... .25
Austin Booster-Plug-in ..... .50
Midget Switch: slide—.35 Turn ..... .50
Glow-Start-Pack ..... .25
Condenser .20; Metal ..... .35
Ohlsson Instant Clip ..... .15
Alligator Clip ..... .10

PROP SPINNERS

1½"-.65; 1¾"-.90; 2"-.95; 2½"-1.10
3" Needle Nose 1½" dia. 1.15
Plastic 1½" ..... 2" ..... .50
Scamper Plastic 1¾", 1½", 2", 2¼" ..... .45

WHEELS

Semi Pneumatic (pr) 1" 1.10
2½" — 1.25 3" 1.75
Sponge Rubber (pr) ¾"-1" 30c 1¼"-.40c, 1½"-.50c, 1¾"-.60c, 2"-.75
Tail Wheel 1½"-.75
Treader Plast. (pr) 1½" or 1¾" ..... .75
1¾"-.75—2½"; 2½"-.60c 3" 1.00
2½" 1.25
3" 1.50
Spinners (state engine) ..... .50
Plastic 1½" 1.50

91g ACCESSORIES

E Z Mixture ..... .35
.004 or .006 x 3—.35 .006 x 2—.50
Fuel Pump (pt. or ¼ pt.) ..... .40
Presto Starter (state engine) ..... .35
Tanks (state engine) ..50, .65, .75
Neoprene (ft) ..... .15

MISCELLANEOUS

Batt. Box Pen., Medium, Regular .60
Bell Crank 1½", 2", 2½", 3" ..... .20
Copper Tubing ¼" OD, per ft. ..... .20
Finger Guard ..... .40
Fuel Proof (pt. or ¼ pt.) ..... .40
Presto Disc Starter ..... .35
Pylon Engine Starter 1.95
Metal Motor Mount, Sm—80c, Lg. ..... .90
Needle Valve Extes. Flexible ..... .25
Neoprene Tubing, per foot ..... .20
Transparent (reg. or AA) ft. ..... .15
Spitfire Tanks: Spitzy—.75c; Wasp, No. 70 oil, 3 oz.—.25c; pint ..... .80
Plug Wrench, 3-way—15c; 4-way ..... .25
Plug Wrench, 5-way—15c; 4-way ..... .25
Plywood (6"x12") 1/32" ..... .20
1/16"—.25c; 1/8"—.50c; 1/4" ..... .75
Silk per yard 1.50
Socket Plug Wrench, 4-way ..... .50
Spinner Washers ..... .10
Flexible Needle Valves: Colt, Royal Spitfire, Spitzy—.75c; Wasp, Baby Spit, Infant, Torp Jr., Torpedo 48—.50c; Universal Needle Valve (A-B-C engines) .85c; Fleetlite .75c
Vibrator 2.50
E-Z Running Stand ..... .50
Pilot Starter ..... .95, 10, .50

SPECIAL SOUVENIR BARGAIN

The manufacturer of a well-known engine, after selling 20,000 at $9.95, has decided to go out of production. We have his remainder of 1,000 complete sets of finished and undinished castings and parts: Cylinder, piston, connecting rod, crankshaft, gas line, timer, crankshaft, crankcase, cam, etc., including screws, gaskets, nuts, etc.

You get a complete set, except spark plug and tank. An interesting souvenir of a model engine in the raw for your den or desk.

No. 59 . . . $1.00 per Complete Set

SPECIAL BARGAIN IN PROPELLERS

SPECIAL BARGAIN IN PROPELLERS IS ASSORTED FOR $1.00

We have purchased 50,000 assorted gas model propellers from the country's largest prop manufacturer.

They are ALL PERFECT and range from Champion semi-finished (listing at 5 for $1.00) to finished and lacquered props that sell up to 40c each regularly. Various pitches, in sizes from 7" to 16".

No selections, please, but we will send you a fine assortment of 15 for $1.00, if accompanied by an order for anything advertised in this magazine. MONEY BACK GUARANTY

Propeller Sale - 8 For $1.00

We don't believe in hoarding, but you won't get a bargain like this anywhere else.

By making a tremendous purchase, AHC has acquired from Rite-Pitch a fine line of finely finished and lacquered high grade, square-tip propellers at a very low price and is passing the savings on to you.

8"dp., 8"sp., 9"dp., 9"sp., 10"dp., 10"sp., 11"dp., 11"sp., 12"dp., 12"sp. ALSO 5"dp., 5½"dp., 6"dp., 7"dp.

DE LUXE HOBBY CATALOGS

25¢ — 128 page 2-color 9" x 6" catalog, fully illustrated. Over 10,000 items, including gas, diesel, jet and CO2 engines, complete and rubber-powered planes, boats, cars, solids of all kinds, tools, engine parts, etc., etc. PLUS many articles on building and flying, trouble shooting, etc., etc. PLUS pages and pages of accessories, engine parts, decals, wood, dope AND EVERYTHING.

10¢ FREE — 64 page 2 color 9" x 6" illustrated catalog, free flight and U-Control planes, engines, gas, jet, diesel, Co-2, accessories and supplies, rubber-powered planes, solids, boats, cars. Over 2000 items. PLUS articles on building, dope-ing, flying, engines, etc., etc.

Plus jumbo catalog of thousands of hobby items: Plane, boat, car, engines, accessories, radio, gas, rubber, etc., etc.

CANADIANS! You save plenty by ordering from us. Send remittance in full.

SALE SPECIAL

WINSTON GAS ENGINE LIBRARY

FIVE BIG BOOKS FOR ONLY . . . 1.49

REGULAR PRICE $3.00 EACH A $3.00 VALUE FOR ONLY $1.49

Here is a BARGAIN no modeler (beginner or expert) should pass up. FIVE separate volumes covering every phase of gas and glo engine operation, plus building and flying powered free-flight and control line airplanes, plus lots of other information on boats, cars, forming model clubs, etc., etc. All written by Bernard S. Winston, whose books and articles have been read by over 1,000,000 modelers. Well over 200,000 copies of these books were sold at $1.00 each.

1. **MODEL GAS ENGINE HANDBOOK** — 150 pages, 80 illustrations. A complete manual of the theory and practice of Model Gas Engine operation. Includes Engine Specifications of principal engines, blueprints, directory, dictionary, etc.
2. **GLO ENGINE HANDBOOK** — 64 pages, 80 illustrations. A complete manual on Glo Engines—their theory, operation and care. Includes everything from buying your engine to breaking-in, flying and trouble shooting, plus dictionary, directory, prop size chart, etc.
3. **GAS MODELERS GUIDE** — 176 pages, 92 pictures and diagrams. Here is a book that really tells you about modeling. Contents tell all about free-flight and control-line planes, race cars and boats, radio control, winning contests, forming clubs, AMA rules, club directory, complete dictionary, etc., etc.
4. **CONTROL-LINERS** — How to build and fly them. Includes everything: how the sport started, types, designs, construction, power plant, propellers, controls, dopeing and painting, etc., etc. Covers the subject from A to Z.
5. **GAS MODEL PLANE CONSTRUCTION** — Over 152 pages and 200 pictures and diagrams. Give you the answers to every problem from tools needed to repairing the model. Covers free-flight and U-Control. Chapters include points and structures, fuselages, wings, engine and accessory mounting, sanding and finishing, assembling, covering, doping and finishing, repairs, etc., etc.

ALL 5 VOLUMES - 500 PAGES Only $1.49

DOPES (Can't U.S.A. Only)
Aeroglaze Hot Fuel Proof (20c and 60c sizes) Filercoat, Cement, Plastic Balsa, Cresun Green, Cresun Gray, Orange, Yellow, Corsair Blue, Curtiss Blue, Fokker Red, Hawk, Lambert Gray, Aluminum, Stearman Red, Stinson Green, White, Cream, Maroon, Olive Drab.
COMET (10c) Cream, Gray, Red, Gloss Top Coat, Horizon Blue, Insignia Blue, Orange, Maroon, Gold, Banding Sealer, Silver, White, Yellow
Speed-o-lac (10c and 35c sizes) Aeronca Orange, Army Yellow, Aeronca Yellow, Banana Liquid, Black, Gray, Chocolate Brown, Cub Blue, Cub Cream, Cub Green, Cub Yellow, Gloss Top Coat, Horizon Blue, Insignia Red, Metallic Blue, Olive Drab, Banding Sealer, Silver, Stinson Cream, Taylorcraft Cream, Taylorcraft Yellow, Tennessee Red, Maroon, Waco Blue, White, Undercoater, Dark Gray
CLEAR DOPE Aeroglaze 20c and 60c; Comet 10c and 25c; Speed-o-lac 10c and 35c.
THINNER Aeroglaze 20c and 45c; Comet 10c and 25c; Speed-o-lac 10c and 25c.

U-CONTROL ACCESSORIES

Adjustable Push Rod set ..... .25
Bellcrank 2" or 3"—10c, 4" ..... .15
BERKELEY control lines
.008, .010, .012 ..... .50
.008, .010, .012 3-70 ..... .60
.008, .010, .012, 2-100 ..... 1.00
Stranded .018, .021 50, 1.00, .70' 1.25, 200' 2.50
Berkeley Metal Flight Reel 1.25
Berkeley Metal Handle 1.00
Berkeley Flight Reel (with wire) AA—1.85, A-B 2.25
Elevator control horn; Veco ..... .30
Elevator Lever 3½" ..... .15
E-Z Plastic Control Handle ..... .95
Fist Lead-in Wire AA or AB 3 ft. .15
Instant Use Handle, 4 pr. ..... .50
Luzon Clips A. B. C or D Pr ..... .10

PYLON control lines
.008, .010, .012, .014, .016 dia. 2-52 lines ..... .60
.008, .010, .012, .014, .016 dia. 2-70 lines ..... .75
Flexible 2-52 1.80, 2-70 ..... 1.95
Pylon Control line Handle ..... .50
Pylon Plastic Handle 5" ..... .85
Rnd Fai Reel 1.00
Simplex Handle & Reel 1.50
Stunt Bellcrank & Elev. Horn ..... .25
Swivels, small pr.; large ..... .20
Tommy Handreel 1.75
U-Reely Contr.—7.50, cable 8.50
U-Reely Remoto 12.50
Veco Bellcrank ..... .30 & .25
Wood Control handle ..... .25

MODEL BOATS

Chris-Craft 26" C-D 6.75
Chris-Craft Express 25" B.C.D. 5.75
Chris-Craft Runabout 28" BCD 6.25
Marco 25" B.C.D 6.25
Owens Yacht 26" B-C-D 6.25
Vineyard 25" BCD 6.25
Dumas Electric Drive Unit for 6 above ships 4.00
Buckeye prefab. 17" A-B-C 4.95
Cabin Cruiser 17" ABC 2.95
C.C. Riviera 12" AA 2.95
C.C. Riviera 12½" AA-A 3.50
C.C. Special 12½" AA-A 3.50
Higgins Speedster 20½" AA-A 4.95
Richardson Sedan 17" AA-A 5.95
Royal Skimmer (Incl. Engine) 10.95
Spitcraft Plastic (Incl. Engine) 14.95
Sterling C.C. Runt 19" AA-A 7.95
C.C. Kip Cruiser 14" AA-A 3.50
Scooter 12" AA 3.25
Sea Maid 12" AA 2.95

THIMBLEDROME

Con. 15 or .099 Engine only 8.95
Con .199 Engine only 8.95
Chs car ready to run with engine 13.95

RACE CARS

Half-pint ..... (AA) 2.98
Chipmunk Complete with Engine 19.95
Tornado Complete with Engine 10.95

WE SELL DEALERS TOO!

Did you know that Mod-Ad Agency, Inc., the wholesale affiliate of America's Hobby Center, Inc., is one of the fastest growing jobbers in the business?

We know your problems because we have your problems!

Write for sample catalog, ready for your imprint and our fantastic dealer program. No reason why more dealers are doing business with us. Includes our 60-Day return privilege, etc. Special Deal if you are going into business. We ship anywhere in the world.

Write to MOD-AD AGENCY, Inc.
156 WEST 22nd STREET, NEW YORK 11, N. Y.
1067 BROADWAY, BROOKLYN 21, N. Y.

AMERICA'S HOBBY CENTER, Inc. - New York City, Brooklyn, Chicago, San Francisco, Denver, New Orleans

Complete FLYING OUTFITS

WORTH TWICE OUR COMBINATION PRICE!

WE WILL SUPPLY
A complete flying outfit with your own choice of any advertised engine or plane—and save you money. Just order from us or write for price.
IF IT'S ADVERTISED, WE HAVE IT

IT ISN'T OFTEN that you get the chance to buy, at less than half price, a U-Control Plane, Engine and All-Accessory Outfit with your own choice of a well known FACTORY ASSEMBLED ignition or glo engine. Everything carries the famous America's Hobby Center as well as the manufacturer's guarantee.

Even if you are a beginner, you won't have trouble building and flying any of these flying outfits, full-size plans of any easy to-build and fly plane, every accessory you will need, complete instructions, etc., etc. If you are an old-timer at building and flying model planes, we don't have to tell you what these bargain outfits are really worth.

Thousands of these complete units have already been sold. They have met with enthusiastic reception because they represent a value unheard of before in the modeling field. The price is so low that we cannot sell to dealers. You really save from $10 to $12 by buying the complete, packaged unit—everything is engineered by experts for a perfect flying combination.

YOUR OWN CHOICE OF ENGINE, PLANE, PLUS ALL ACCESSORIES, INCLUDING: Correct size finished propeller • 3-way plug wrench • Presto Engine starter with handle and cord • Speed indicator tables • Log Book • Motor cover • Spark or glo plug with gasket • Complete engine instructions • 24 page Gas Engine Theory Manual • Engine adjustment chart • Metal fuel tank and gas line • Metal Battery box • Wilco Quality Coil • 12" Hi-tension lead wire and end clips • 18" insulated ignition wire • Ignition slide switch • Coil holder and mount • Everlast condenser • SAE #70 Oil • 4 ignition wiring lugs • 2 plane identification tags • 72 insignias • GIANT book on Control-liners, How to build and fly them • Cement • Sandpaper • "Pro" all-metal knife and blade • Metal bellcrank with bolt, nut and washer • Elevator horn • Elevator hinges • Lead-in wire • Push-rod wire • U-Control handle • 100 ft. U-Control stainless steel wire & reel • Membership in Modelcrafters of America • 128 pg 2-color catalog • Postage • Packing • Insurance. Ignition parts not needed with glo-engine not included.

YOU WON'T GET OTHER BARGAINS LIKE THESE!

YOUR CHOICE $8.50

YOUR CHOICE $10.00

YOUR CHOICE $12.50

YOUR CHOICE $13.50

YOUR CHOICE $15.00

PLUS

TRAIL BLAZER Model Plane with carved lower fuselage-half, fully formed aluminum upper half. Balsa sheet wing, no tissue used. Balsa tail surfaces, plywood engine mount. Schematic drawings with step-by-step plans. Rubber wheels, detail paint schemes. 24" wingspan.

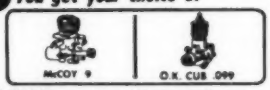
PLUS ALL ACCESSORIES LISTED ABOVE

NEW .099 UNITS

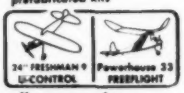
Includes all 3 items

For ease of assembly, for trouble-less operation and for real effortless U-Control flying, these units are the answer to the modeler's dream. Even the beginner will have no trouble in assembling the outfit in one evening and be completely ready to fly the next morning.

1 *You get your choice of*



2 *PLUS* Your choice of 2 completely prefabricated kits



3 *Plus all accessories*

COST ONLY McCoy 9 Glo Outfit $10.95
O K Cub 099 Outfit $ 9.95

AA FLYING OUTFITS

These are the new pint-size glo engines that are so tiny (1 to 1½ ounces) but develop plenty of power for free-flight or U-control flying.

Your own choice

$7.25

$7.75

$8.25

Plus your choice of planes: All planes prefabricated, easy to build and fly

Plus all accessories

BARGAIN OUTFIT

One of the biggest bargains we have ever offered. Over $10.00 of merchandise for only $7.50.

1 *YOUR CHOICE OF*

or

2 *PLUS* your choice of 4 prefabricated Scientific 22" span u-control planes.

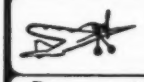
3 *PLUS ALL ACCESSORIES*

COST ONLY $7.50

READY TO FLY

These complete outfits don't give you the fun of building. They are ready-to-operate. All the fun's in the flying. All you'll need in addition is fuel and battery. — Nothing to Build

AEROMITE $9.95
A really beautiful rod plastic job 17" Wing span with Baby Spitfire engine, prop spinner, tank, etc. already installed. Shock-absorbing spring steel landing gear. Jim Walker U-control for precision and stunt "lying" plastic control handle, nylon control cord.


AJ FIREBABY $7.50
Beautifully finished and painted, even fuel-proofed. 19" span. Includes new "slow-motion" propeller and engine.

DOUGLAS NAVY SKYRAIDER $9.95
All plastic model including K & B Torp Jr. engine. Landing gear with aluminum rubber-tired wheels, decals, tank, spinner, etc., etc. Includes nuts and bolts for motor assembly. Free U-Control model.

DUSTER $10.95
True scale bi-plane u-control model of the type used to crop-dust, stunt and train many pilots. Includes everything including dusting tube, pilot, etc., etc. plus Spitzy Senior engine. Beautifully finished in yellow and blue. 15".

F4S $9.95
Swept wing supersonic fighter. Completely ready to fly 20" u-control model designed for the novice or the champ. Includes Spitzy Senior engine, pilot, canopy, rubber wheels, etc. Beautifully finished in silver.

F6S $11.95
Super Sonic Fighter. Big swept wing U-control job powered by Royal Spitfire .065 engine. Another Mel Anderson beauty. Includes wing tanks, machine guns, rockets, etc. 28" wingspan.

YANK 23½"

$5.95 CHOICES OF
Equipped with O.K. .029 and all accessories. All balsa free-flight, champ-pulling models. Top notch performers.

HAWK 27"

SOLDIERS! SAILORS! MARINES!
Orders placed through us get special attention. We understand your problems and take special care of your orders. Or send for our SPECIAL SERVICES DATA

$7.95 COMPLETE RACE CAR COMBINATION OUTFIT

NEW! Scientific's "HALF-pint" race car, complete with direct drive PLUS O.K.049 engine PLUS all needed accessories. Five minutes after you open the package, you can race this car on any smooth surface, even your own backyard or cellar. Speeds over 40 miles per hour. COMPLETE except for fuel and battery. Car alone $3.95.

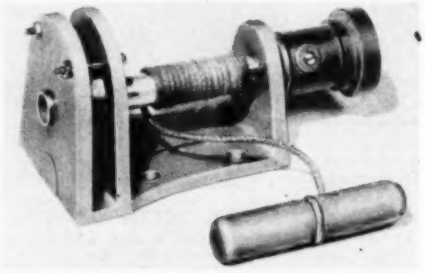
How To Order Send remittance in full (we prepay packing and insurance) or send $1 and we ship collect C.O.D. same day for balance. Address your order to us at your nearest branch office

- Dept. MC-102 156 West 22nd St., New York 11, New York
- Dept. MC-102 1065 Broadway, Brooklyn 21, N. Y.
- Dept. MC-102 55 E. Washington Street, Chicago 2, Illinois
- Dept. MC-102 Rm. 230, 742 Market St., San Francisco 2, California
- Dept. MC-102 Rm. 306, 427 Carondelet St., New Orleans, La.
- Dept. MC-102 965 Gas & Electric Bldg., Denver 2, Colorado

America's Hobby Center INC

OVER A GENERATION OF FAIR DEALING GUARANTEES YOUR SATISFACTION

Having Trouble Starting Your Diesel?



Pylon Brand STARTER $1.95

Of course you are. And with the growing popularity of the diesel, the diesel starting problem is getting bigger and bigger.
But now, thanks to Sullivan engineering and research, who brought you the great new model material of the year . . . Nylon, now brings you a revolutionary new starter that makes diesel starting easy for the first time.
The diesel starting problem has been in getting a fuel that would make them easy to start, because electric starters were out of the question, and diesels won't spin fast enough by hand. But here at last is a practical starter that will give you the 8 or 10 fast turns necessary to get your diesel started.
We predict this starter will bring the diesel into its own and make the diesel the popular engine of the future. Get in on the ground floor. Go to your dealer today. Look, try, compare this starter with any starter on the market. You'll like it!

Sullivan Products

PYLON BRAND

PHILADELPHIA, PA.

Sweeping the Country!

Where Horsepower Counts—It's Wasp!!!

In ½-A competition from Coast to Coast the Wasp is the favorite power plant with contestants. The Winners' Circle finds Wasp powered entries taking home the hardware. In Free Flight, U-Control, and Payload events the Wasp powers more winners than any other engine. For Sport and Pleasure flying, too, the easy starting, dependable, powerful Wasp is the choice of beginners and experts.

Wasp .049 DISPLACEMENT

Your dealer has probably already suggested Wasp to you if you're in the market for a ½-A engine. The clean lines and lightest-weight-per-horsepower give the Wasp an advantage other engines in the class can't match.

If *YOU* want a *WINNER* —Get a *WASP*

Free Flight Combination	**$6.75**
U-Control Combination	**6.50**
Back Cover	**.50**

ATWOOD MANUFACTURING CO. PICO, CALIF.

Man at Work

(Continued from page 2)

The *Demons* had an rc event. Like most rc events today, you can walk away with a prize if you can get the model back, much less do any maneuvers. This rc fan has to admit that rc contest events must be shocking to the rest of the modelers. The one disturbing thing is the willingness of rc entrants to take chances. Poor range? Oh, heck, try it anyway. Escapement missing? Heave it! Ship out of adjustment? Toss it! MAN at Work earnestly suggests a toughening of AMA rules, as was done in speed, and for the same reasons. Any club putting on an rc event should have a qualified judge whose opinion should decide whether or not a given plane be permitted to fly. You have pull tests in stunt and speed. Why not, say, an 800 foot ground check for rc? If a guy can't do it, why let him fly? If a ship shows bad control in the first flight with skipping or chattering of the controls and violent maneuvers as the result thereof, disqualify the man for the rest of the day. Don't kid yourself, these rc'ers include the world's most unprepared contest entrants. There's a rough road ahead.

▸ Carted along two rc jobs and a couple of control wagons on a Connecticut vacation. Had real hopes of the local experts showing us how to handle the *All American* stunter. If worse came to worse, there was the *Trixter Profile Trainer*. Both, by the way, were sneaked out of the house the night before. Trouble was that the Connecticut boys were starting rc. Not only refused to fly anything on wires while we were there but dragged us up on a high hill top to see their first rc attempts. Could see for miles around. Ships go out over valleys in any direction. All the time we were flying, could hear the distant growl of control line motors from a summer place across one valley. Didn't do us much good, though. Cows all over the place. Had to shoo them away from planes. One thought a transmitter hanging on a pole was a salt block and gave it a raspy licking. You'd stand there, button in hand, the other hand shielding the eyes, when suddenly there would be an appropriate snort right behind you.

▸ Ted Clodius, major domo of the Mirror Flying Fair, puts out an information sheet each year after the contest, giving a breakdown of planes, engines, props, fuels, and other products. What catches our eyes was the fact that one winner used "Blast." Another guy flew an "Old Flannel" kit. Wonder if Conrad really was there? One surprise was the presence of 58 Ardens in Class A. Must have been hoarding these oldies.

▸ Your club looking for a sound film to show at meetings? Herkimer Tool and Model Works, Inc. Herkimer, N. Y., has completed a ten-minute film to be relased for distribution via the hobby dealers. It will be offered free to clubs, churches, schools, business groups, and other civic organizations. Covering both control and free flight, with the emphasis on the youngster's first attempts to enter competition, the film illustrates the impact which model flying made on the public during the past 20 years. Charlie "Cub" Brebeck stated that this hobby accounts for more than $20,000,000 of kit and engine sales a year.

▸ When it comes to free flight, tain't no one who sees eye to eye. Out our way even Half Aa is slowing down. Fields are few and far between. Contractors dig new foundations madly. Due to the potato shortage last spring, farmers plowed almost everything that was left. No field seems big enough for these floating gassies. Personally, can't see these contest floaters for sour apples. They are so light and powerful that they are virtually meaningless. Folks near cities need a different type of

(Continued on page 51)

YOU WON'T GET OTHER BARGAINS LIKE THESE!

Believe it or not!

Brand new engine
TWO (2) PLANES
All accessories

$4.98 With Cub .049 engine $5.98

$4.98 COMPLETE FLYING OUTFIT
WITH TWO PLANES
YOU GET A PERFECTLY MATCHED $10.00 OUTFIT FOR ONLY $4.98

Mel Anderson's
SPITZY .045

EASY STARTING
FULL GUARANTY
LONG LASTING

Including prop, glo plug, clip, wrench, mounting bolts and nuts.

PLUS

Scientific's NEW
2 in 1 kits

18" Profile Models.

U.C. Prefabricated, formed landing gear. Less than one hour to build.

PLUS

Every plane and engine accessory for building and flying. Rubber wheels, authentic decals, hinges, bellcrank, control handle, flying lines, cement, Glo Engine Handbook, Giant book on building and flying. Presto engine starter, motor cover, log book, etc., etc.

EVERYTHING!!
Except battery & fuel

$4.98 STILL AVAILABLE!!

5 ACES OUTFIT

AHC'S FAMOUS COMPLETE COMBO
Spitzy .045 Engine

PLUS: Your choice of any of these Scientific prefab 22" U. C. planes: Aeronca Sedan, Cessna, Piper Cub, Stinson.

PLUS: All needed accessories as included in our other outfits. Everything but battery and fuel.

A $10.00 VALUE

With Spitzy .045 Engine $5.55
With Cub .039 Engine $5.95

A DELUXE BARGAIN COMBO

ROYAL SPITFIRE .065
Most Powerful ½A engine

PLUS Your choice of

BEECHCRAFT 17
or
BOEING P-26A

Scientific's 16" & 18" wingspan control-line models. Extra deluxe kits. PERFECTLY and COMPLETELY PREFABRICATED. Beautiful models you will be proud to fly—and a cinch to build in only one evening.

PLUS

EVERY accessory to build and fly except dope, fuel and battery. INCLUDED are matched propeller, tank and fuel line, glo plug, connecting clip and wire, wrench, motor mounts, mounting bolts and nuts, flying wire and reel, control handle, motor cover, identification tags, Presto engine starter, all hardware, bellcrank, elevator horn, hinges, sandpaper, cement, rubber wheels, decals, lead-out and pushrod wire, formed landing gear, engine instructions, full-size plane plans and instructions, log book, speed indicator, PLUS Glo Engine Handbook, giant book on Control-liners, PLUS membership in Modelcrafters of American, postage, packing, insurance and 128 page 2-color hobby catalog.

BEAT THIS PRICE IF YOU CAN — A $15.00 VALUE — FOR ONLY $9.95

ENGINE TRADE-IN SERVICE

While America's Hobby Center, Inc. does not sell used engines, we have a constant request from schools, clubs and overseas soldiers for second-hand engines for experimental work.

If you have a used engine, we will be glad to accept it in trade for any merchandise (motors, planes, boats, accessories, etc.) except Flying Outfits and a few other exceptions, listed in our ads or catalog. Just send in your engine (with your name and address) as the following schedule indicates:

Your old Engine PLUS

$3.75 =	$5.00
7.50 =	10.00
11.25 =	15.00
15.00 =	20.00
22.50 =	30.00

Credit towards your Purchase

You will receive the usual free premiums, subscriptions, etc.

EVERYTHING in this magazine can be ordered from A.H.C.

N. Y. CITY MODELERS

TWO STORES TO SERVE YOU!
Largest stock in the country at either of our two stores
156 W. 22nd St., New York City
1065 Broadway, Brooklyn, N. Y.

Experts on hand to help you with your problems. Complete stock including engine parts and service at both stores

- 1. One year subscription to Model Airplane News, Air Trails and Flying Models or its equivalent value to our regular customers.
- 2. 14-Day Money Back guarantee on unused purchases.
- 3. Unused purchases exchangeable within 14 days.
- 4. No postage or packing charges — we insure safe delivery anywhere in the world.
- 5. 24 Hour service. Mail addresses in Chicago, Denver, New Orleans and San Francisco, which will airmail your orders to our N. Y. office for prompt shipment.
- 6. Most complete model stock in America—gas, rubber, solid, etc., etc. If it's advertised, we can usually supply it.
- 7. Competent understanding of your modeling problems.
- 8. No "minimum" orders. Any order is welcome.
- 9. With gas motors, 50 ITEMS WORTH OVER $7.00 AT NO EXTRA COST.
- 10. Rubber wheels, knife, etc., etc., with every gas plane selling for over $1.50. 12 ITEMS WORTH $3.50 AT NO EXTRA COST.
- 11. Membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES.
- 12. Illustrated giant 2-color 128 page catalog with every order.

AHC does!!

HOW TO ORDER

Send remittance in full (we prepay packing and insure) or send $1 and we ship collect C.O.D. same day for balance. Address your order to us at your nearest branch office.

America's Hobby Center INC.

156 West 22nd St., New York 11, New York
1065 Broadway, Brooklyn 21, N. Y.
55 E. Washington Street, Chicago 2, Illinois
Rm. 230, 742 Market St., San Francisco 2, California
Rm. 306, 427 Carondelet St., New Orleans, La.
985 Gas & Electric Bldg., Denver 2, Colorado

Please RUSH me the following: DEPT. MC-102
PLEASE PRINT

Name .....

Street Address ..... Amount Enclosed .....

City ..... Zone ..... State .....

Page	Quantity	Name & Description of Items	Cost Each	Total
➡	ONE ONE ONE	ENGINE TROUBLE TRACER & AID MANUAL SPEED INDICATOR CHARTS FLIGHT LOG BOOK	FREE with each order	
			Total	

24 HOUR SERVICE AT ALL TIMES

Only 25¢ each

Handy WORKBENCH EDITIONS of these famous Winston books (regularly $1.00 each) for only 25 cents each:

GLO ENGINE HANDBOOK. Tells all about the theory and operation of glo engines ☐

CONTROL LINERS. How to build and fly them. Covers the subject from A to Z ☐

GAS MODEL PLANE CONSTRUCTION. The answers to every problem you will ever meet ☐

Build a Monogram Model and Enter It in the Contest in Your Town!

Now There's Double Fun Building MONOGRAM MODELS

Many Thousands of Model Dealers Will Sponsor Monogram

Model Building Contests

in Their Stores

See Your Dealer

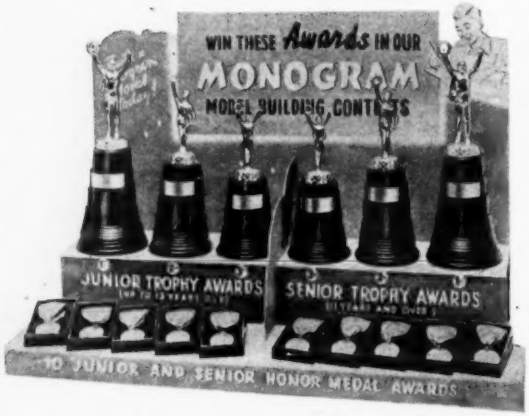
Many model and hobby dealers will soon be sponsoring Monogram Model Building Contests.

Models built from any of the 28 Monogram Kits will be eligible for entry and awards. Judging will be done on appearance only — models do not have to fly or operate. Two age groups — Juniors, up to 13 years old — Seniors, 13 years and over. Pick your favorite Monogram kit, build a prize winning model and enter it in your dealers contest.

You've got 28 of the most popular models of all time to choose from — Airplanes — Ships — Race cars. You'll have molded plastic parts, carved bodies and finished wood parts to work with. You can't help but build a good model and you'll have double fun and double thrills all the way.

See your favorite model dealer today. He may be one of the many thousands of dealers who are sponsoring Monogram Model Building Contests. Get a Monogram Kit and a FREE CONTEST ENTRY BLANK from him. Build a Monogram Model and win one of six beautiful trophies or ten honor medal awards. See them on display in your dealer's store.

WIN Beautiful Trophies and Honor Medals



Watch for this Trophy and Medal Award Display in Model and Hobby Shop Windows in Your Town.

G-1 Piper Cub	G-6 Long Midget	G-11 Navion
G-2 Aeronca	G-7 Cessna Seaplane	G-12 Hellcat
G-3 Monocoupe	G-8 Spad Pursuit	G-13 F-86 Sabre Jet
G-4 Ercoupe	G-9 F-51 Mustang	G-14 Corsair F4U-5
G-5 Boeing Kaydet	G-10 Thunderjet F-84	G-15 Warhawk P-40F

T-1 Mustang F-51 T-2 Corsair F4U-5 T-3 Thunderjet F-84

R-1 Hot Shot R-2 Terra-Jet R-3 Mono-Jet
R-4 Midjet B-6 Aqua-Jet

B1 L.S.T. 608 B2 Destroyer USS Hobby B3 Cruiser USS Chicago
B4 Battleship USS Missouri B5 Carrier USS Shangri-La

Get Monogram Models from your dealer. If no dealer near you order kits you want from address below. Remit 25c additional for packing, shipping and postage.

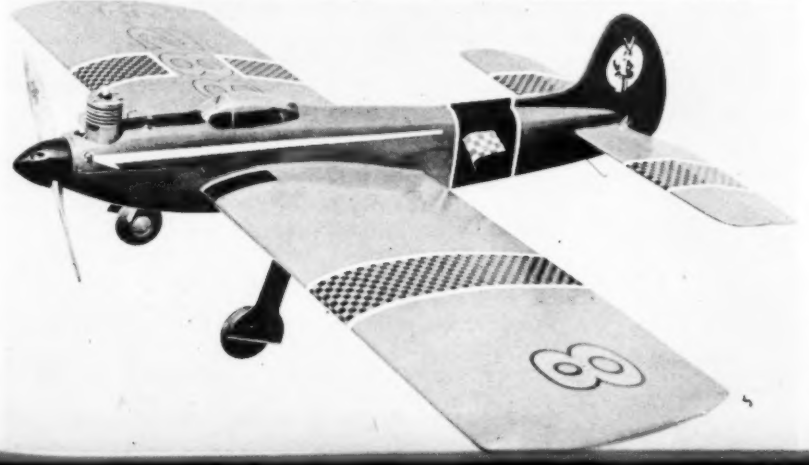
Monogram Models, Inc. 3421 WEST 48TH PLACE, CHICAGO 32 { MODEL AIRPLANES • SHIPS JET POWER RACERS

Ready to go, paint and all, *Gyrator* weighs only 24 ounces with Fox up front. Enlarged horizontal tail insures quick, positive recoveries from loops, wingovers without vertical "porpoising."

GYRATOR

Good looks, excellent control response, smoothness, combined with an extremely high strength-weight ratio, make this one of the best stunters.

Below—Looks like a Navy dive bomber, doesn't it? A unique feature is an extreme rearward location of the bellcrank. Giving improved handling, this detail is going to upset a lot of apple carts.



by HARRY WILLIAMSON

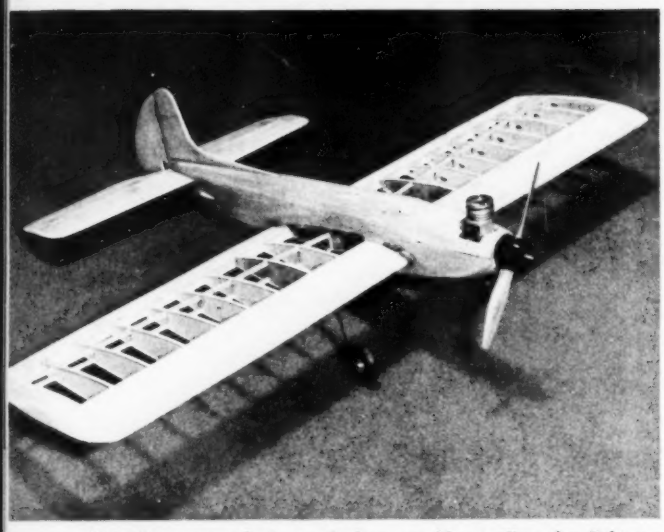
The usual reason behind the design of a new model airplane is improved performance. That was the thought we had in mind when the *Gyrator* was being developed on the board. During this initial stage, we tried to incorporate all the little improvements that had come to mind in the shop and to profit by the lessons learned out on the flying field. Apparently, judging from the flight tests, we found a good workable combination. This ship is stronger, faster and far more manueverable than any of our past efforts.

This design has a far higher strength to weight ratio than we thought possible —a very pleasant surprise. The original model, ready to fly, with a Fox .35 sitting up front, weighs exactly 24 ounces. Yet, structural strength is far greater than many heavier models we have built. This was accomplished by keeping the structure strong at the points of greatest flight stress and lightening wherever loads are light. Fairly careful selection of materials, using hard, heavy balsa wood only where absolutely necessary, was also a major factor in accomplishing this weight reduction.

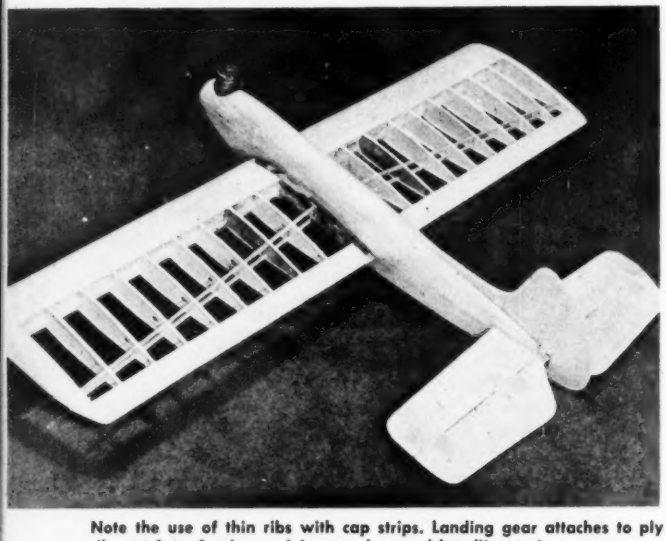
At the end of the first test flight, it was clearly evident that the *Gyrator* was living up to its name. The control response was extremely fast but smooth, requiring only the lightest pressure on the handle to accomplish the desired manuever.

Recovery from a loop or wingover is fast and positive, without the vertical "porpoising" found in some ships. This was accomplished by increasing the area of the horizontal tail surface. This is an important feature, particularly when flying into a strong wind. Frequently, these vertical oscillations get progressively worse if the pilot is unfamiliar with the ship, ending up as a *Silkspan* bag full of balsa scrap.

Notice the location of the bellcrank on the drawings. Now, before you go tell the modeling world that Williamson has flipped his lid, leave us explain! Locating the B.C. here was done for a dual purpose; to keep the ship tight on the lines through any manuever and to provide a greater looping couple. This can be seen by noticing its location with respect to the C.G. and the center of lift. Unfortunately, this idea is not original—all credit should go, we think, to Hank Cole who had it on one of his ships some years back. It's a swell idea, though and again contributes largely to the *Gyrator's* performance.



Virtually warp proof wing results from use of box trailing edge, light rear spars, vertical stiffeners with D-section leading edge. Strong, efficient.



Note the use of thin ribs with cap strips. Landing gear attaches to ply rib, out from fuselage, giving good ground handling traits, appearance.

When you fire up *Gyrator*, you'll have one of the sweetest jobs going.

Construction is quite conventional, although several small features are worth pointing out. The wing has a box trailing edge! By adding 1/16" sheet balsa stiffeners between upper and lower halves of this member and between adjacent ribs, the wing was strengthened amazingly. This feature, plus the location of the lightweight rear spars, render the wing virtually warp-proof.

A D-section leading edge is used for structural strength and efficiency. Stiffeners are used between the 1/4" square upper and lower main spars, thereby offering the same properties as a structural channel, an ideal condition to absorb flight and impact loads.

The 1/8" hardwood gusset on the front and middle of the main spar not only serves as a convenient landing gear mount but also adds to the strength of the wing in the event of a crackup, reducing the possibility of the ship resembling a hound dog standing with his back to a hurricane. Cap strips over the 1/16" sheet ribs give a smoother covering job and offer quite a bit of stiffness to the ribs. Block balsa tips, are used for ease of construction.

Fuselage construction is the very popular streamlined box. Plywood doublers with hardwood engine mounts beef-up the nose. A solid balsa chin piece permits the nose to fair smoothly into the spinner.

Sheet tail surfaces make for a light building chore and add very little extra weight. Built-up construction could be used, if desired, and would probably add to the performance. If some of you ambitious characters try it, drop us a line care of the editor with your comments.

Frankly, the landing gear was placed in the wing for appearance only but we discovered that the ship handled better on landings and takeoffs with this set-up, so it will be used again on some of our later jobs.

As we mentioned previously, the *Gyrator* was first tested with the Fox .35 in the nose. Substituting a K & B .29 reduced the speed slightly but noticeably increased the manueverability. The slower speed made it a little easier for us to fly. Those of you, however, who have had a good deal of experience with hot stunt ships will probably find the larger combo more to your liking. Any good stunt engine from .23 to .36 displacement should do a commendable job for you, so suit yourself as to powerplant choice. However, we don't recommend anything larger than a .36, since the excess power and weight will probably result in high speed stalls, unless a conscious effort is made to keep the C.G. where it belongs.

Choice of a fuel tank is largely up to the individual. We used the metal tank shown on the drawings with good results but a Jim Walker pressure tank or one of Walt Hughes' clank tank designs should work to perfection. If, however, you decide on a wedge tank, make certain it will fit in the nose of the ship and still give the capacity needed. Total wing area is 400 squares, offering, it seems, a close to ideal size for the class engines used.

The *Gyrator* is not at all difficult to build or fly. Follow the drawings carefully, use good material of the type and size specified and check the ship thoroughly before flying and the results should be excellent. Sloppy workmanship and a careless attitude toward detail can result in disaster at the 90 mph speed this cat travels. So, do a conscientious job and shoot for some first-place hardware.

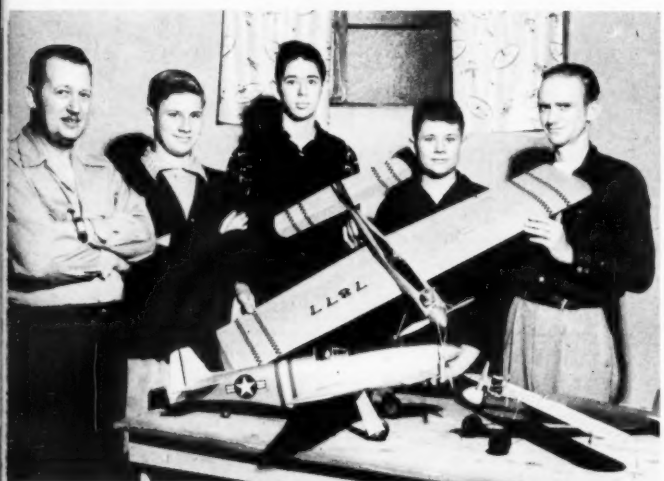
Cut the required number of each rib shown on the drawings, noting that two of them are made of 3/32" plywood. Pin the balsa ribs together in a stack and sand the outlines until all the ribs are identical in size and shape. File the leading edge and main spar notches accurately and check for a smooth fit with a piece of 1/4" sq. main spar stock.

Choose a piece of 1/16" x 3" x 36" sheet balsa that is medium hard and perfectly straight and slice in half lengthwise. This forms the upper and lower halves of the trailing edge, after butt-joining two 4" long *(Continued on page 44)*

FULL SIZE PLANS FOR BOTH "THE GYRATOR" AND "THE AERONUT" AVAILABLE. SEE PAGE 39.

Organized in the summer of 1951, the group rapidly snowballed. Boys of all ages, sizes, faiths meet in the local Methodist church. Members build almost all types of models, ranging from solids on up to hot stunters. This is one sharp looking group of guys and their airplanes.

Though the boys were raring to go on meeting night, the photographer got all 39 "Pee Wee's" to hold still just long enough for a group shot.



L to R—Mr. Dickman, instructor; John Stiene, Secretary; Jodie Heath, the President; Dick Dickman, the Treasurer; Bill Poston, the Instructor.

pee wee patrol

▼

by RICHARD P. WHEELWRIGHT

It began as a plan to keep together a knot-hole baseball club during the winter. Now Erlanger, Kentucky, is mighty proud of its model club.

▸Saturday nights promptly at six o'clock, a tall, lean, red-headed young man carrying a tool kit walks rapidly up Stevenson Road in Erlanger, Kentucky. At the Dixie Highway corner, he is joined by eight or ten youngsters, each carrying a cigar box. The group approaches the side entrance of the Erlanger Methodist Church. About 20 more lads in the age range from eight to 15 mill about the entrance. Each carries a cigar box. A warm, fatherly glow lights in the eyes of the lean man, his step is a little more sprightly as he acknowledges the youngster's shouts of greeting. They enter the church basement—lights switch on. The Saturday night session of the Model Airplane Class is under way.

The boys, all chattering at once, use the peculiar vernacular of the experienced plane maker. Spouting words that confuse the layman — dope, props, decals, struts — all have special meanings to this happy clan. The cigar boxes pop open, tools, cement and balsa wood are placed neatly on long wooden benches. The benches, arranged in a U shape to enable the instructors to better view the workings of their charges, become alive with activity.

Each boy is working on a model of his own selection. The younger lads work on the solid, less complicated models while the older boys labor on the built-up precision jobs. Some of the more advanced members are already working on gas models.

A chance to show off models built during the regular session comes on the Club's Exhibition Night, will be attended by parents and friends.

Encouraging father-and-son teams is one of the big objectives. The local library reports upswinging demand for all books on aeronautics.

The tall man is instructor of the group, Bill "Red" Poston, 27-year old freight agent with Delta Airlines, who has been a model plane addict for 15 years. Bill builds them all. He is just as enthusiastic helping a beginner as he is working on one of his own scale model Navy jets. A 12-year old club member best summed Red up in one simple sentence, "He loves makin' planes and he loves boys."

The Class was organized in the summer of 1951 by Ewell Brown, a Communications Department employee at nearby Boone County Airport and also a member of the Methodist Church, who wants to keep his knot-hole baseball club together during the winter months. The idea snowballed and boys of all ages, sizes and religious faiths sought membership. Four-foot short Welden Harris works industriously alongside six-foot tall Victor Cassini. A cordial welcome is extended to all and present membership now numbers 35.

A *Prop Busters Club* has recently been formed. Members consist of the older boys who have elected Jody Heath, "one of the best model builders," President. This group is seeking AMA membership, sponsored an Exhibition Night, inviting parents and friends to the Church to see the favorite model of each boy on display. A show case in the local drug store cooperated by proudly exhibiting a finished P-51 *Mustang* constructed by a father and son team, Father Earl Dickman and Son Dick Dickman. A series of placards surrounding the plane further huckstered the advantages of attending the Club's show night.

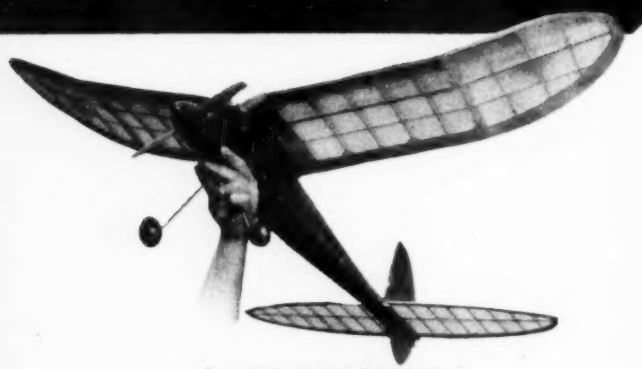
Encouraging father and son building teams, as well as young and older boy teams is one of the prime objectives of the class. The men behind the project believe that through joint building effort the younger lads will become more interested in their work. They believe that working with the older youth gives the younger ones a feeling of companionship and tends to keep the immature mind from diverting to thoughts of play or dreaming.

The boys are eager to attend the sessions and parents report that no prodding or reminding is needed to get the boys to class on time. Mothers of members say the sprites look forward all week to meeting night. "We had thirteen boys here one Saturday night in spite of a snow and sleet storm," Founder Brown boasts. Mr. Brown is then quick to explain that Mrs. Brown doesn't mind in the least that he and his two sons Billy and Jim attend the weekly meets. "She likes television anyway," he smilingly adds. *(Continued on page* 39)

When Councilman Taylor, here shown ironing out a kink in construction, sought contest prizes, and relates the generous response "scared" him.

Instructor Bill Poston helps solve knotty problem. Many thousands of junior models throughout country could stand help like this. Need it!

THE AERONUT



by SID NOVEMBER

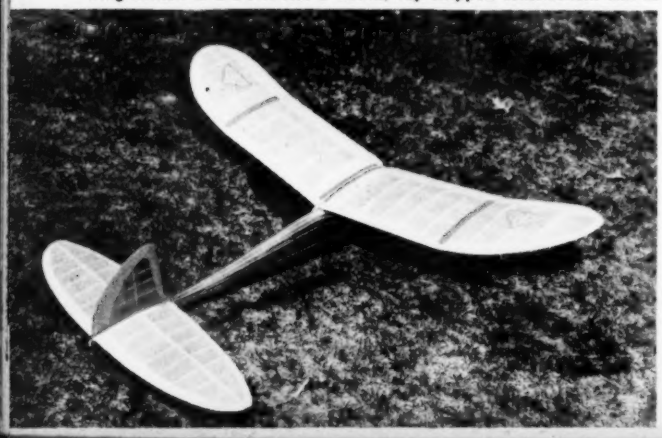
A good free flight is like a thoroughbred horse. Its ancestors are important. Already a consistent winner, this job is for the guys who know how to handle an airplane!

Ole Sid has been going to the contest wars longer than he cares to remember. Ship incorporates pay-off ideas. Original used K & B 19.

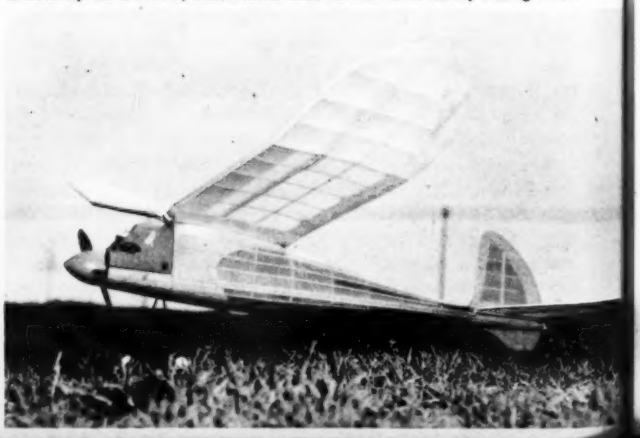
This ship is a composite of most of my contest winning jobs. In it you will find incorporated some of the best features of each of them. Influenced by other fellow Aeronuts, I arrived at this streamlined version of a consistent contest flyer. A ship of this type took first in B in one of the *Gas Monkeys'* open meet. In the previous year these ships were up in the first three places. The "A-B" version is designed to take from a *Torp 19* to a *Foster 29*, or any motor of similar power. The original has a *Torp 19*. Study the plans carefully and read the instructions thoroughly. If closely followed, the builder will find many hours of enjoyable flying. There are also two other versions of this job, an .049 and .074-.099. Dimensions of these will be found at the end of this article.

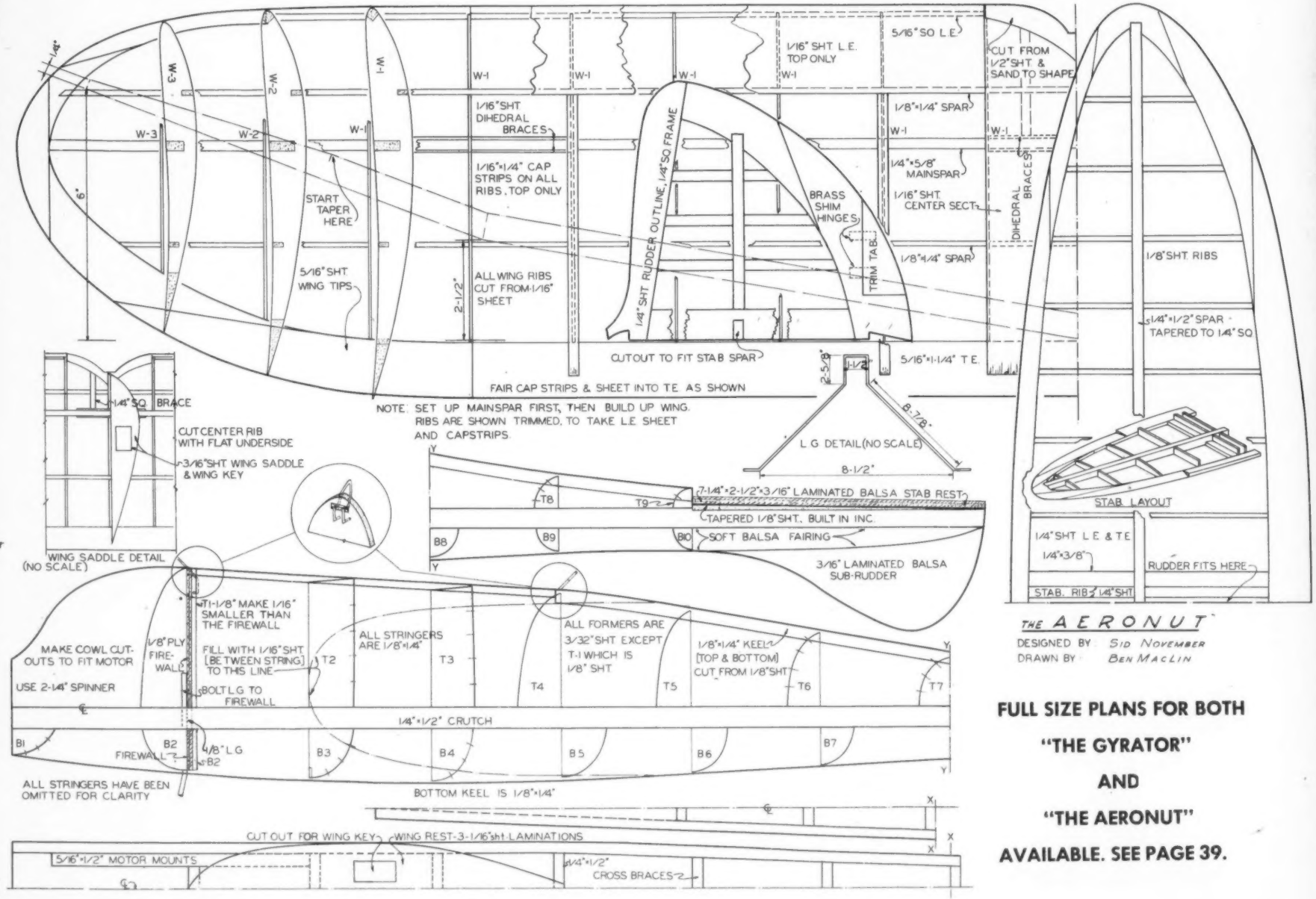
You will notice that conventional crutch construction is employed. However, because of streamlining and fairings, if you adhere closely to instructions and plans you will find the fuselage quite easy to construct. When the crutch is dry do not remove from board. Build superstructure right on top of it. With this method you will find that no twist or warps will develop. You will note that the firewall is backed up by two bulkheads, T1 and B2. The firewall is put in after the upper-half of the fuselage is complete and only after B2 is in place. The formers are cemented directly to crutch. Note carefully the position of the wing rest and the top keel. Have both these items in before placing the stringers in position. You will notice the stringers are omitted in the front for the sake of clarity. Be sure to put them in. Stringers go to T1 but not to top part of firewall. The bottom formers and stringers are put on the same as the top; however, you will notice the keel and stringers go from the front of the fuselage, former B1 to former B10. The motor mounts shown on the plans are for the *Torpedo 19*. For other motors, make proper allowances to fit. You will notice that the tail rest has built-in incidence. Build it accurately according to plan. After all the stringers are in place, bolt landing gear to firewall. Put the wing hooks in place (1/16" music wire). The hooks are so made that even if they loosen from the cement the rubber tension will still keep the wing firmly in place. These hooks also allow the wing to fly off in the event of impact. After this, fill in with 1/16" sheet between stringers as on plan. Put subrudder in place, fairing it with soft balsa. Mount motor. Cowl is built up and faired around the motor. *(Continued on page 46)*

Wing, tail outlines are pleasing to eye—for a welcome change! The wing section is a Davis No. 5 airfoil, cap-stripped construction. Silked.



Streamlining pays off in the glide, it says here in big print. The fuselage is built up on a crutch, sheet filled around the nose. Really racing lines.




W-3
W-2
W-1
START TAPER HERE
5/16" SHT WING TIPS
1/16" SHT DIHEDRAL BRACES
1/16"x1/4" CAP STRIPS ON ALL RIBS, TOP ONLY
ALL WING RIBS CUT FROM 1/16" SHEET
2-1/2"
1/16" SHT L.E. TOP ONLY
5/16" SQ L.E.
CUT FROM 1/2" SHT. & SAND TO SHAPE
1/8"x1/4" SPAR
1/4"x5/8" MAINSPAR
1/16" SHT CENTER SECT.
DIHEDRAL BRACES
1/4" SHT RUDDER OUTLINE, 1/4" SQ FRAME
BRASS SHIM HINGES
TRIM TAB
1/8"x1/4" SPAR
1/8" SHT RIBS
1/4"x1/2" SPAR TAPERED TO 1/4" SQ
CUTOUT TO FIT STAB SPAR
5/16"x1-1/4" T.E.
FAIR CAP STRIPS & SHEET INTO T.E. AS SHOWN
NOTE: SET UP MAINSPAR FIRST, THEN BUILD UP WING. RIBS ARE SHOWN TRIMMED, TO TAKE L.E. SHEET AND CAPSTRIPS.
1/4" SQ BRACE
CUT CENTER RIB WITH FLAT UNDERSIDE
3/16" SHT WING SADDLE & WING KEY
WING SADDLE DETAIL (NO SCALE)
L.G. DETAIL (NO SCALE)
2-5/8"
1-1/2"
8-7/8"
8-1/2"
7-1/4"x2-1/2"x3/16" LAMINATED BALSA STAB REST
TAPERED 1/8" SHT., BUILT IN INC.
SOFT BALSA FAIRING
3/16" LAMINATED BALSA SUB-RUDDER
STAB LAYOUT
1/4" SHT L.E. & T.E.
1/4"x3/8"
RUDDER FITS HERE
STAB. RIB 1/4" SHT
T1-1-1/8" MAKE 1/16" SMALLER THAN THE FIREWALL
FILL WITH 1/16" SHT [BETWEEN STRING] TO THIS LINE
MAKE COWL CUT-OUTS TO FIT MOTOR
1/8" PLY FIRE-WALL
USE 2-1/4" SPINNER
BOLT L.G. TO FIREWALL
ALL STRINGERS ARE 1/8"x1/4"
ALL FORMERS ARE 3/32" SHT EXCEPT T-1 WHICH IS 1/8" SHT
1/8"x1/4" KEEL [TOP & BOTTOM] CUT FROM 1/8" SHT
1/4"x1/2" CRUTCH
FIREWALL
4/8" LG
ALL STRINGERS HAVE BEEN OMITTED FOR CLARITY
BOTTOM KEEL IS 1/8"x1/4"
CUT OUT FOR WING KEY
WING REST-3-1/16" sht LAMINATIONS
5/16"x1/2" MOTOR MOUNTS
1/4"x1/2" CROSS BRACES

THE AERONUT

DESIGNED BY SID NOVEMBER

DRAWN BY BEN MACLIN

FULL SIZE PLANS FOR BOTH "THE GYRATOR" AND "THE AERONUT" AVAILABLE. SEE PAGE 39.

AIR WAYS

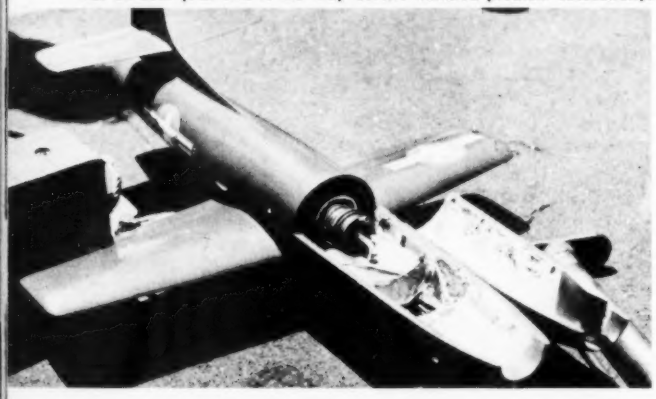
At the Mirror Meet

For eastern modelers who can't get to the Nationals, the Mirror Meet is the biggest contest of the year.

Each year in June the New York Daily Mirror puts on the famous Mirror Flying Fair. Throughout the east, the "Mirror Meet" is a substitute for the Nationals. It is the year's big event. Entries are limited to the first 1,000 who register. Modelers hog the spotlight until three o'clock, after which death defying, auto driving acts and air shows take over. A huge crowd circulates in a kind of carnival atmosphere. All this, it should be added, would not be possible without Grumman cooperation.

Among yearly batch of scale jobs is at least one enclosed Dynajet. Douglas, by Ralph Corelle, Salisbury, N. C. Note the perforated flaps.

Below—Protective interior lining and adequate air shroudings are essential on such jets. This is the way Corelle handled problem successfully.



A gentle prime is administered with hypo to speed job by its builder, Art Greger, West Orange, N. J. Speed is a regular Mirror meet feature.

Don McGovern and Lt. Cmdr. John Eddy discuss Don's Berkeley North American *Savage*. Twin Cub .09 powered with Jetex tail assistance.

Don Broggini, flying wing man, lets go of Jim Hamelman's Grumman *Bearcat* in the carrier event. Popular type but is not an ideal subject.

C. Adams, right, Beacon, N. Y.; Greengrove, Newark, N. J. ready team racers. *Challenger*, left; Keith Rider, right; both were built from M.A.N.

Dick Carol, Washington, D. C., starts speed job. Fancy dolly and tricky wheels. He also appears to have had the only half a helper in the meet.

Capt. P. R. Burnett's (Langley Air Base), *P-47* already won M.A.N. Air Ways prize. A fantastic job, it has too many honors to try to list here.

Douglas *Skyraider*, adorned with clusters of rockets, bomb is placed on the carrier deck for starting by helper for Jame Meikel, New York City.

Pretty North American *AT-6* entered in scale event, Tom Shelford. Free Flight ran to *Hogans, Zekes, Fubars*, all already familiar to the modelers.

Man-size Douglas *O-38*, Adrian Costantino, Pawtucket, R. I., weighed 5½ pounds on Mac 60. Really had the details and that shiny finish.

George Hill, Pittsburgh, Pa., can't tear himself away from Douglas *B-26* bomber. Looks just like the real thing in Korean service. Good paint job.

Another bi-plane lover, Harry Ashton, from Hampton Bay, N. Y., had this Stearman trainer with a two-speed Ohlsson engine sitting up front.

The original model flies best when launched at 45 degree angle to the right. Rudder tab is adjusted for fairly tight left circle. Clay on nose.

Classy Canard

Design secrets: All positive in "front wing". Less dihedral in the main wing. Due to more forward CG, added vertical tail area is required.

Below—Four coats sanding sealer polished down, last with wet-or-dry; black trim, red, white, blue wing stripes, for nifty finish. Pick top wood.

by EARL CAYTON

When correct proportions are used the "tail-first" glider is as stable and capable of good flights as the tractor. Tops a half minute. Try this interesting ship for a change of pace.

The *Classy Canard* is a fine performing hand-launch glider that is pleasingly different. Canards aren't better, but they do perform every bit as well as their tractor brothers with the advantage of being out of the "tractor rut."

Canards adjust and fly just about the same as any other glider if the correct proportions are used. Any positive incidence incorporated should be put in the forward lifting surface, which is now the elevator, for stability during a stall. Also, better directional stability was noticed in stall recoveries by taking some of the dihedral from the rear lifting surface, now the wing, and replacing in the elevator. Since the center of gravity is now well rearward more, compared to the conventional tractor, area was added to the rudder to keep its normal effectiveness. Using these correct proportions, the *Classy Canard* possesses all the stable characteristics normally found in tractors and has the ability to turn in consistent flights of over a half minute.

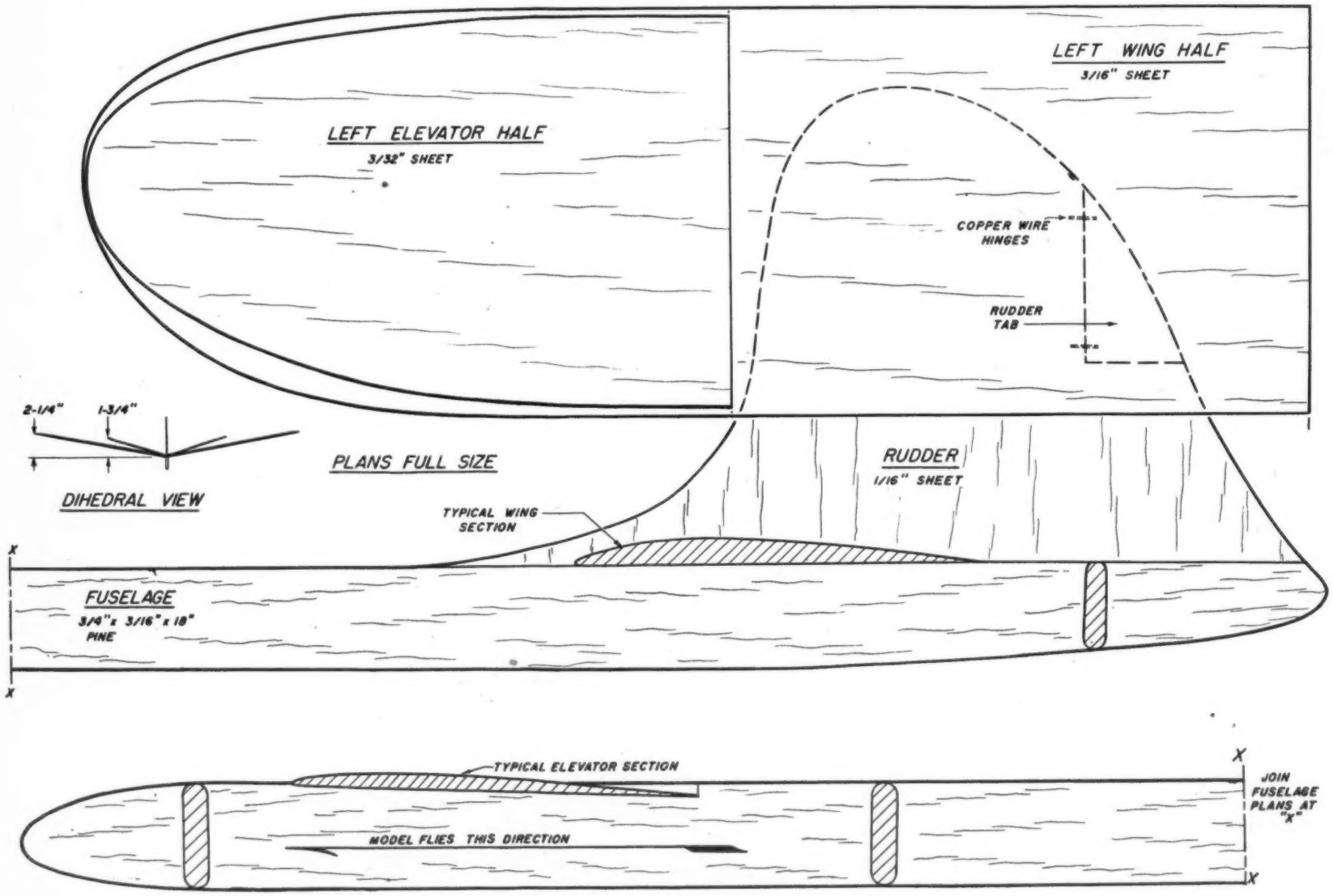
The plans are full size so merely join the two fuselage plans at "X"; make reverse tracings for the right wing and elevator, and then start construction.

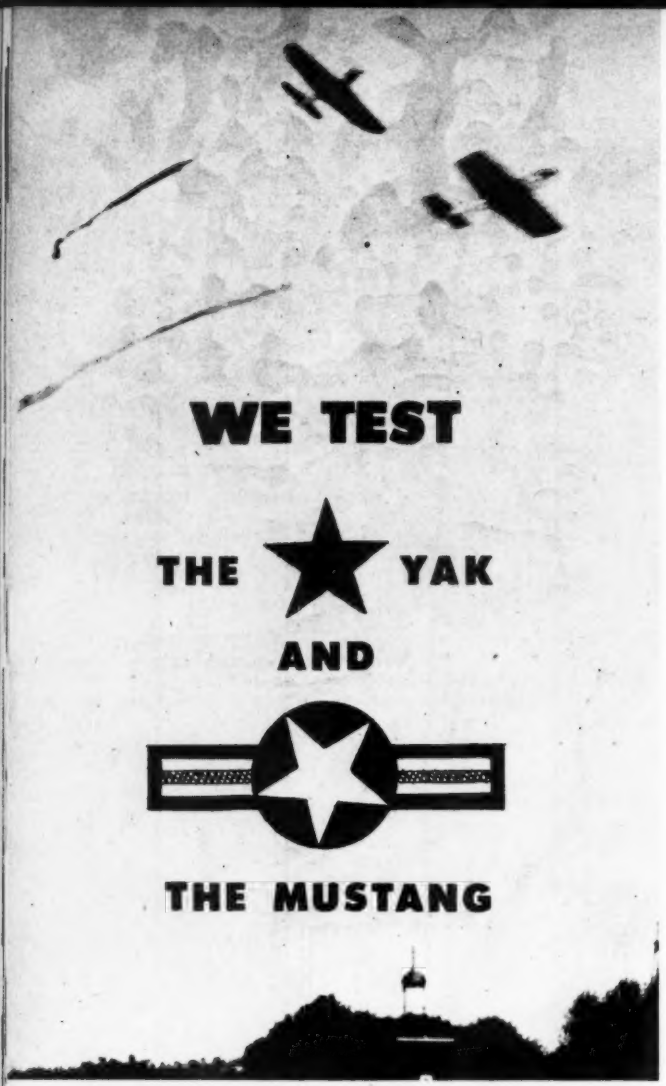
The wing is carved from 3/16" x 18" fairly soft balsa. Cut the tips to shape with a carving knife or jig saw. Carve the airfoil in roughly with a knife and rasp. Finish up the airfoil with progressively finer sandpaper to 10/0. Prop up one side and measure 4-1/2" dihedral; this will take care of the dihedral in both sides at once. For strength the dihedral joint should be trimmed to a flush fit and several coats of cement used.

Cut the elevator from 3/32" medium quarter grain sheet balsa and carve to shape similar to the wing. Remember that 1-3/4" dihedral is used at each tip. The rudder is cut from 1-1/6" medium quarter grained stock. Use copper wire for the tab hinges.

The fuselage is cut from 3/16" x 3/4" x 18" pine. Rock-hard balsa may be substituted if a 1/4" thickness is used. Cut the necessary grooves for the wing and elevator. Notice that 3/32" positive incidence is used in the elevator. Carve to the cross-section shown.

Before assembly, recheck the wing and elevator grooves for the correct amount of incidence. *(Continued on page 53)*


LEFT ELEVATOR HALF
3/32" SHEET
LEFT WING HALF
3/16" SHEET
COPPER WIRE HINGES
RUDDER TAB
2-1/4"
1-3/4"
DIHEDRAL VIEW
PLANS FULL SIZE
RUDDER
1/16" SHEET
TYPICAL WING SECTION
X
FUSELAGE
3/4" x 3/16" x 18" PINE
X
TYPICAL ELEVATOR SECTION
X
JOIN FUSELAGE PLANS AT "X"
MODEL FLIES THIS DIRECTION
X

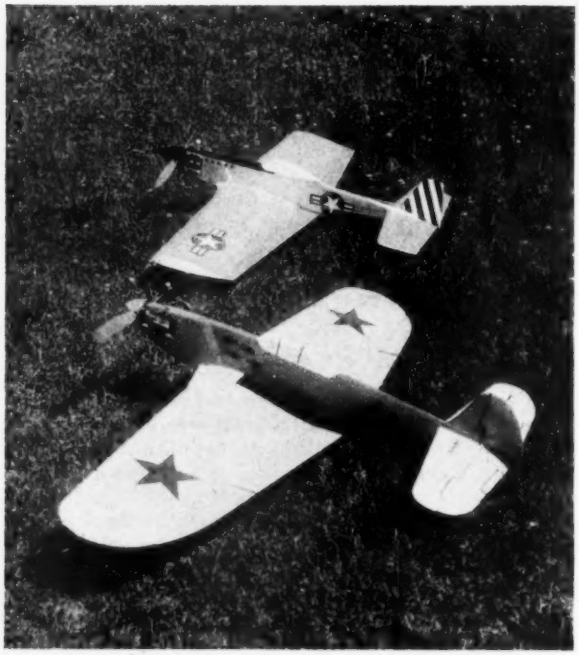


In actual combat, the M.A.N. tested *Yak* chases the *Mustang*. Before you hiss (!) note that the *Mustang* still has the long streamer. Exciting, eh!

by DON GROUT

▼

Two semi-scale Sterling kits designed expressly for combat flying breeze through a rugged test routine. For good measure the test pilot's report gives the run-down on combat rules as developed for both the Mirror and at the Plymouth finals.



With appropriate color schemes and markings, this pair makes swell building project. Either ship will make an excellent sport flying plane.

▶ Spectacular to fly and watch, combat is proving a real crowd getter. It injects not only the elements of building and flying but also of competition and chance. One contestant competes physically against the other, not against time or comparative performance. Combat can be flown by the average flier in a parking lot, flying field or back lot. In one extreme case of combat flying, six ships were in the same circle with every man for himself. At the Mirror Meet this year, it created tremendous spectator appeal all day, with everything from sensational exhibitions of attack and maneuvering to belly crashes and dive-ins by over anxious contestants, to a mid-air collision.

Sterling Models of Philadelphia has now put on the dealers' shelves, the *F-51 Mustang* and the Russian *Yak-9*, a natural combination for combat flying. They are both similar in type and simplicity of construction, but present quite a different appearance when finished.

The *Yak* has a rounded wingtip while the *Mustang* is a square wingtip ship. The tail and rudder are the same. Although both have an under wing air scoop, the profiles are quite different and make an eye catching and snappy flying combinations.

For "We Test," we wanted to fly both the *Mustang* and *Yak-9*. "Loop" Holomany, a control-line enthusiast since the "Brown engine days," built the *Yak* while Yours Truly built the *Mustang*. Both are profile fuselage types with operating wing flaps. Designed for A, B and C displacement engines, the wing span is 38" on the *Mustang* and 40" on the *Yak*. Both have tapered wings with an 8-1/2" average chord, including flaps. The difference in wingtip design gives practically identical wing areas. The kits are highly prefabricated. The body is completely cut out. The wing is of a shaped and notched edge construction with die stamped ribs. The main spar is 1/4" x 3/8" with solid wingtips, and a center rib section, sheeted top and bottom for strength. Tail, rudder and flaps are die stamped. Plywood reinforcement is used in the nose, as are hardwood motor mounts. There are plywood control horns, formed wire flap and elevator joiners, and landing gear. Also large insignia decals and the usual Sterling detailed, step-by-step, easy to follow plans and instructions.

For "We Test," both ships were powered with K & B 29's. A 32 or 35 displacement engine would not be too much. The ships would fly well with hot 19's but don't forget, if you're competitive minded, you'll have to compete with the larger engines. K & B 100 fuel and Top Flite 10-6 props were used although other brands of fuel and props could also have been used. Combat rules, of course, call for 60 foot lines.

The plans show how to make a tank. We used a commercial 3-1/4" long wedge. The *Mustang* weighed just under two

"Loop" Holomany and the author, background, about to begin combat article test flight. Both ships are very evenly matched, so no favorites.

pounds ready to fly and the *Yak* slightly less. Both had plenty of speed and snap in maneuvers and will do a full stunt pattern.

The die stamping is clear and the wood very good. The designing throughout combines the simplest and fastest construction. If you are an experienced builder, you can literally throw away the plans. If you are a beginner, you'll find them very detailed and explanatory—even the ribs are numbered. Plywood control horns are included to give you as complete a kit as possible at a low price. However, we suggest bushing the holes for the push rods with eyelets or tubing to save wear. Veco control horns also worked fine for both flaps and tail. Remember to put horns and bell crank on the correct side of the body for your particular direction of flying. The plans are shown counter-clockwise.

In cementing the wing together, you may save yourself trouble if you cement the main spar together with the reinforcements and allow to dry, then slip the ribs in the spar. Next cement the leading edge together and check the angle with the front of the ribs before the cement is dry. If that angle is not correct, it will put a strain on the spar and possibly cause a warped wing. In assembling, leave the ends of the lead out wires until last and don't cement in the tail until the wing is permanently affixed. In that way it is possible to counteract any small errors in bending the push rod. Also you can completely assemble the elevator, stabilizer and horn and still use Z bends in the push rods. Incidentally, Sterling stresses "double glueing." It's the first time we can remember seeing it stressed in plans. It is important and will greatly increase the strength of your ship.

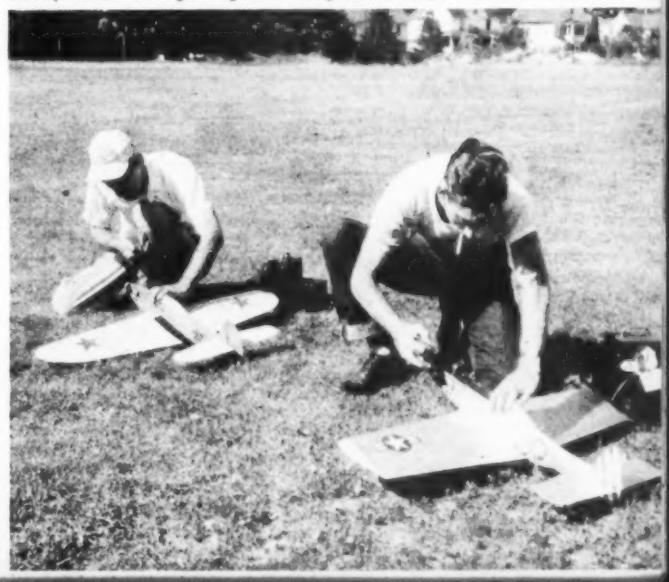
In fastening and cementing the landing gear, it was found advisable to drill bolt holes through the body on each side of the landing gear wire, just below the wing. Bolt metal strips over the wire, otherwise only the cement holds the landing gear from being pushed back into the leading edge of the wing during a bad landing. Veco bell cranks were used with a hookup of push rods from the inside hole of the bell crank to the middle hole on the flap horn and from the outside hole on the flap horn to the inside hole on the elevator horn. On most flap ships, the best combination is a minimum of flap movement to about 35 degrees or 40 degrees movement of the elevator. Excessive movement acts as a break.

A tail skid with a small loop in the end is a good idea otherwise the bottom of the rudder will rest on the ground. Also the loop can be used to tie *(Continued on page 48)*

Construction theme for both planes is thick, die-cut profile fuselage, built-up wings of shaped edges, die-cut ribs, die-cut tail. A cinch to assemble.

Extra maneuverability is imparted by the use of full-span flaps. For this article K & B 29's were used, but hot 19's ok. Bigger engines get lively.

Below—Quick restart between "missions." Lines for both ships must be exactly the same length. Eight-foot long colored crepe streamers used.

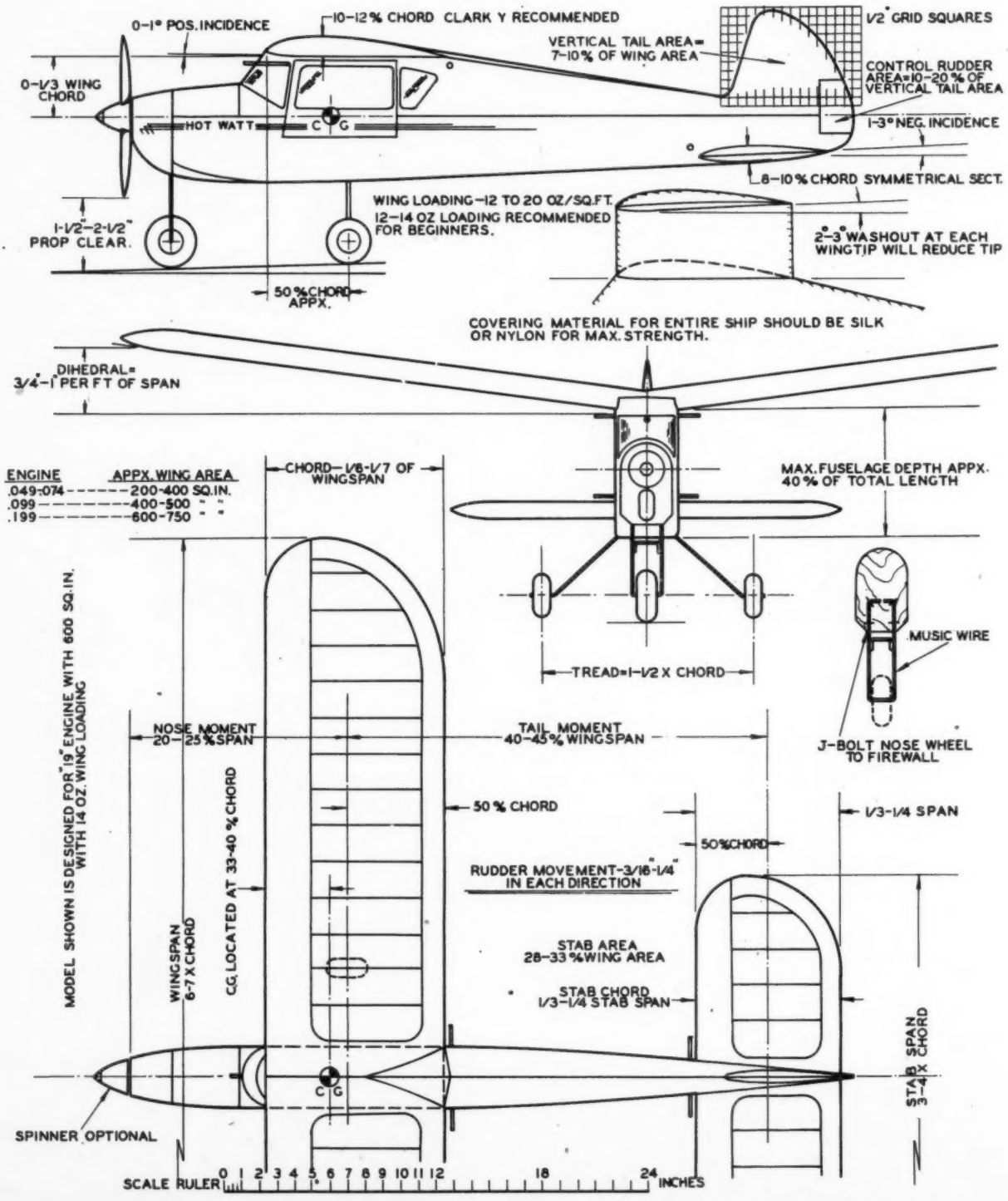


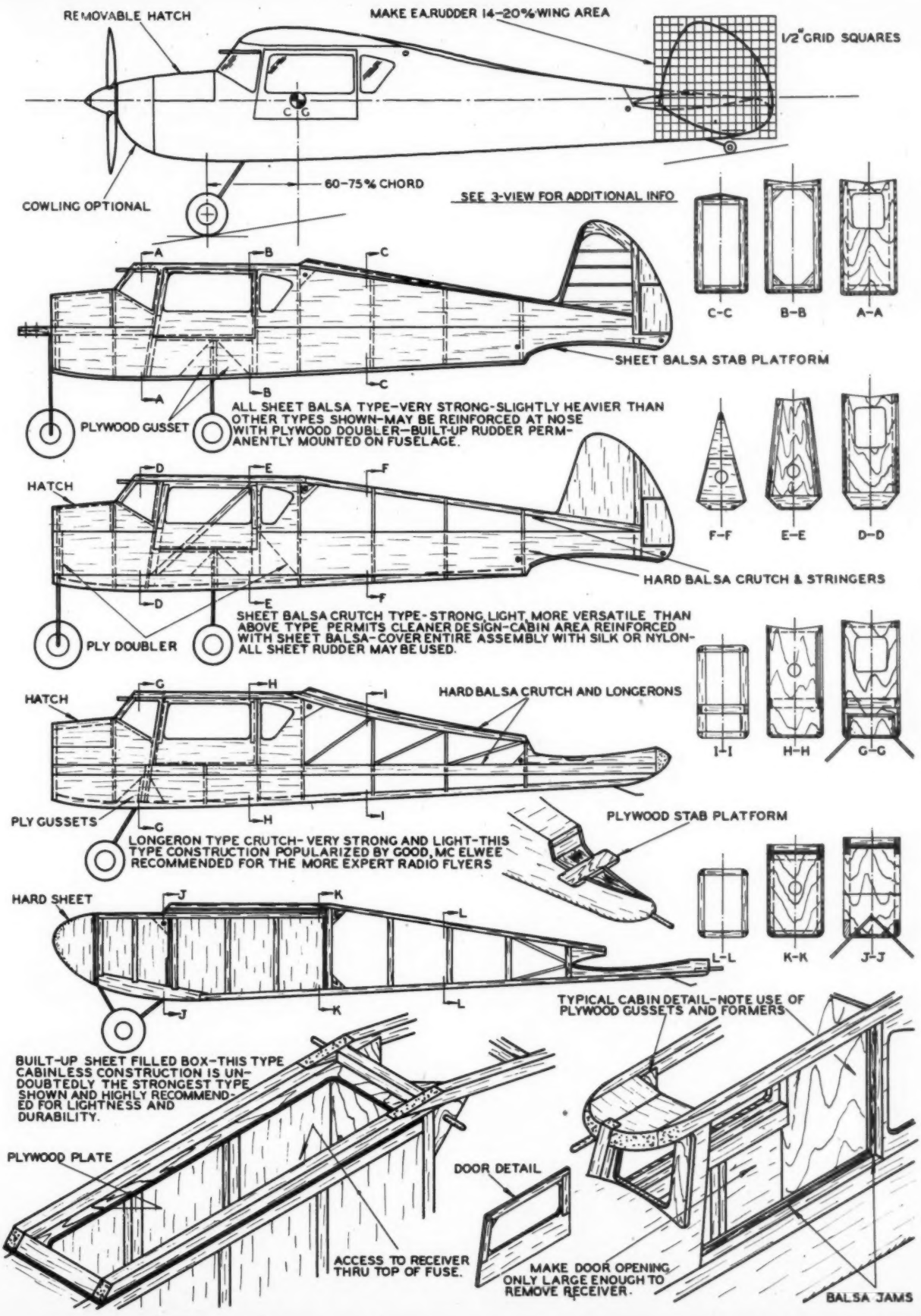
design detail

. . . by Harry Williamson

Radio Models

Much has been published about radios but not enough about the models. This is the first of two parts about the airplane end.


0-1° POS. INCIDENCE
10-12% CHORD CLARK Y RECOMMENDED
1/2" GRID SQUARES
VERTICAL TAIL AREA = 7-10% OF WING AREA
CONTROL RUDDER AREA = 10-20% OF VERTICAL TAIL AREA
0-1/3 WING CHORD
HOT WATT
C G
1-3° NEG. INCIDENCE
8-10% CHORD SYMMETRICAL SECT.
WING LOADING-12 TO 20 OZ/SQ.FT.
12-14 OZ LOADING RECOMMENDED FOR BEGINNERS.
2-3° WASHOUT AT EACH WINGTIP WILL REDUCE TIP
1-1/2"-2-1/2" PROP CLEAR.
50% CHORD APPX.
COVERING MATERIAL FOR ENTIRE SHIP SHOULD BE SILK OR NYLON FOR MAX. STRENGTH.
DIHEDRAL = 3/4"-1" PER FT OF SPAN
ENGINE
APPX. WING AREA
.049-.074 ------ 200-400 SQ.IN.
.099 ------ 400-500 " "
.199 ------ 600-750 " "
CHORD-1/8-1/7 OF WINGSPAN
MAX. FUSELAGE DEPTH APPX. 40% OF TOTAL LENGTH
MUSIC WIRE
TREAD = 1-1/2 X CHORD
J-BOLT NOSE WHEEL TO FIREWALL
NOSE MOMENT 20-25% SPAN
TAIL MOMENT 40-45% WINGSPAN
MODEL SHOWN IS DESIGNED FOR .19 ENGINE WITH 600 SQ.IN. WITH 14 OZ. WING LOADING
WINGSPAN 6-7 X CHORD
C.G. LOCATED AT 33-40% CHORD
50% CHORD
1/3-1/4 SPAN
50% CHORD
RUDDER MOVEMENT-3/16-1/4" IN EACH DIRECTION
STAB AREA 28-33% WING AREA
STAB CHORD 1/3-1/4 STAB SPAN
STAB SPAN 3-4 X CHORD
C G
SPINNER OPTIONAL
SCALE RULER 0 1 2 3 4 5 6 7 8 9 10 11 12 18 24 INCHES


REMOVABLE HATCH
MAKE EA.RUDDER 14-20% WING AREA
1/2" GRID SQUARES
C G
60-75% CHORD
COWLING OPTIONAL
SEE 3-VIEW FOR ADDITIONAL INFO
C-C
B-B
A-A
SHEET BALSA STAB PLATFORM
PLYWOOD GUSSET
ALL SHEET BALSA TYPE-VERY STRONG-SLIGHTLY HEAVIER THAN OTHER TYPES SHOWN-MAY BE REINFORCED AT NOSE WITH PLYWOOD DOUBLER-BUILT-UP RUDDER PERMANENTLY MOUNTED ON FUSELAGE.
HATCH
F-F
E-E
D-D
HARD BALSA CRUTCH & STRINGERS
PLY DOUBLER
SHEET BALSA CRUTCH TYPE-STRONG, LIGHT, MORE VERSATILE THAN ABOVE TYPE. PERMITS CLEANER DESIGN-CABIN AREA REINFORCED WITH SHEET BALSA-COVER ENTIRE ASSEMBLY WITH SILK OR NYLON-ALL SHEET RUDDER MAY BE USED.
HATCH
HARD BALSA CRUTCH AND LONGERONS
I-I
H-H
G-G
PLY GUSSETS
PLYWOOD STAB PLATFORM
LONGERON TYPE CRUTCH-VERY STRONG AND LIGHT-THIS TYPE CONSTRUCTION POPULARIZED BY GOOD, MC ELWEE RECOMMENDED FOR THE MORE EXPERT RADIO FLYERS
HARD SHEET
L-L
K-K
J-J
TYPICAL CABIN DETAIL-NOTE USE OF PLYWOOD GUSSETS AND FORMERS
BUILT-UP SHEET FILLED BOX-THIS TYPE CABINLESS CONSTRUCTION IS UNDOUBTEDLY THE STRONGEST TYPE SHOWN AND HIGHLY RECOMMENDED FOR LIGHTNESS AND DURABILITY.
PLYWOOD PLATE
DOOR DETAIL
ACCESS TO RECEIVER THRU TOP OF FUSE.
MAKE DOOR OPENING ONLY LARGE ENOUGH TO REMOVE RECEIVER.
BALSA JAMS

Arden engine on author's CQ equipped with two-speed. Note the extension to the venturi, as described in the text. This is for a glow plug.

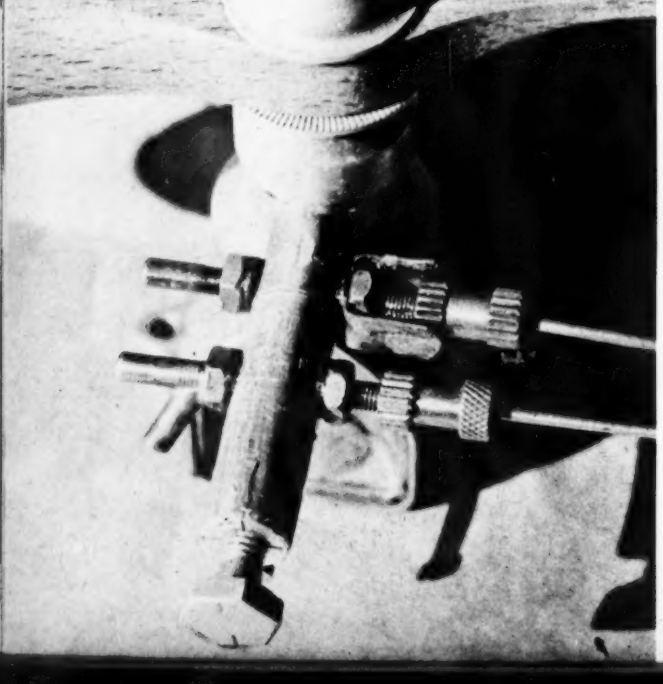
The screw head on the venturi is for adjustment of high-speed operation. Movement of bolt covers or uncovers the air intake slots, changes mixture.

For the R.C. Fan

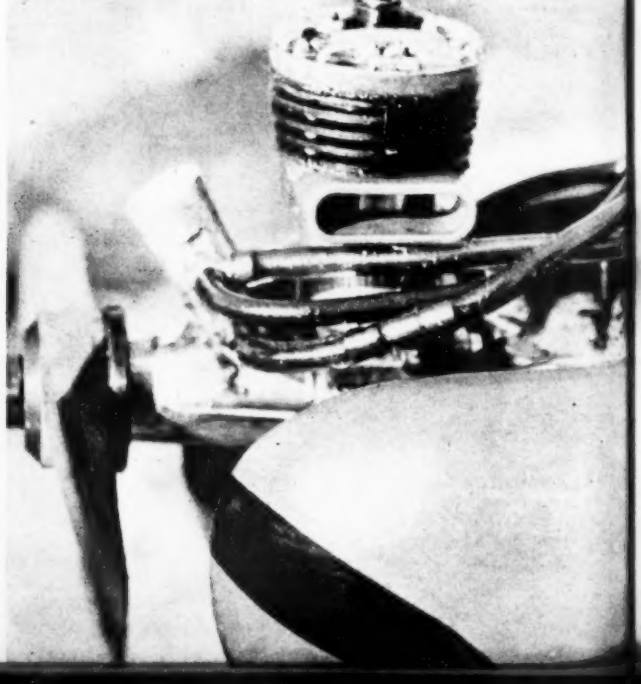
TWO SPEED MOTORS

After rudder control, two-speed engine is the most important addition. Not elevator! Here's the run down on how to rig the deal in your ship.

Fuel tubing runs from T-section on the lower needle valve body, to relay or an escapement inside airplane. On K & B (right) this is the top needle.



Third line is an air bleed. When open, engine sucks fuel from the lower valve only; when closed, the engine runs on both valves or rich mixture.



by E. J. BROWN

Two speed power control for radio controlled models is second in importance only to direction or rudder control. Many recent developments have been made which allow this most desired set-up to be added to the control system without the addition of a second receiver or transmitter involved. Most of the units in use today for the control of model airplanes, boats and cars are of the single-tube, super-regenerative receiver type. The description of units in this article are for receivers of the Control Research, Aerotrol, Good Brothers or other single tube units using a RK61, XFG-1 or 3A5 tube. It is recognized that other multi-channel or tone operated equipment, such as Rockwood's reed set-up and the Bell unit, provide excellent engine speed controls, but higher weight rules out their use in smaller planes. Experiments and workable two-speed controls have been developed by the Good Brothers and also by Owbridge and Schumacher of "Ruddervator" fame.

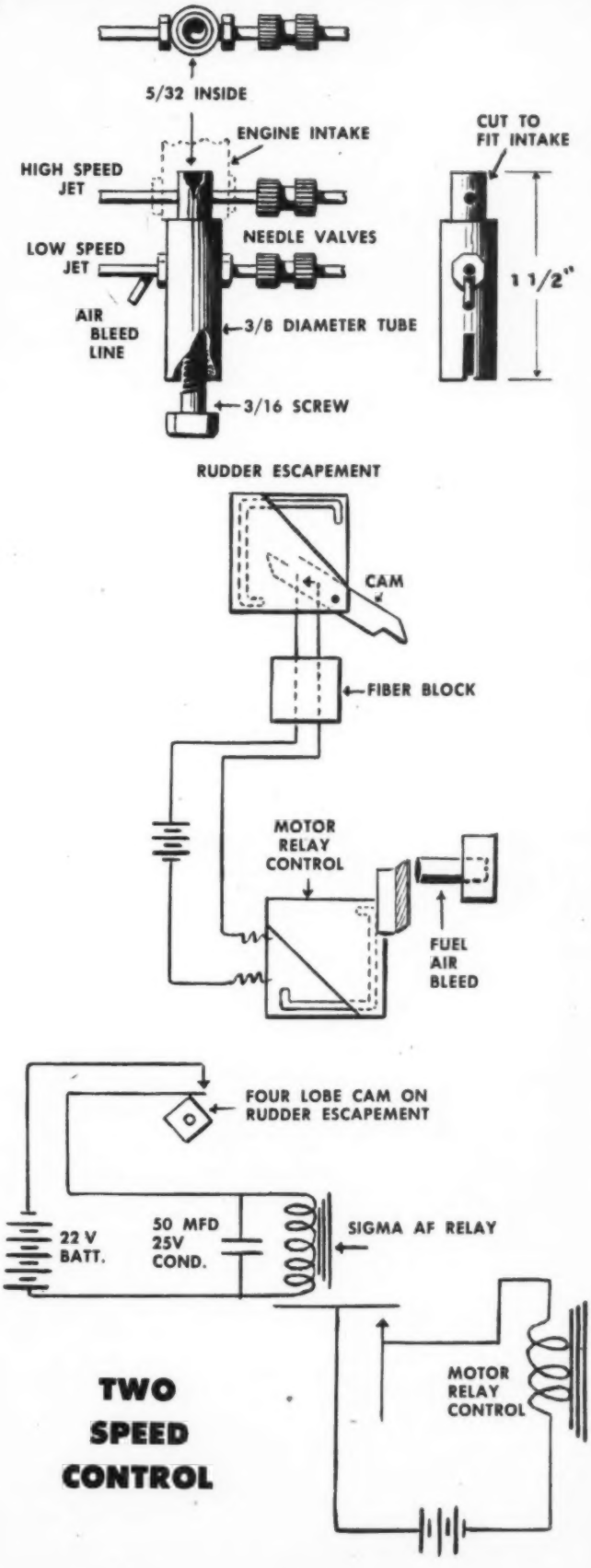
More recent developments have been made by Howard Bonner, E. J. Brown, and others in the Southern California area. These units operate on the principle of admitting additional fuel through a second needle valve and regulating the flow by opening and closing an air-bleed by radio to achieve two-speed control. Bonner has also added an air-bleed valve to the main fuel jet which controls the high speed, and by opening this bleed line, is able to stop the engine at any given time by radio control.

Photographs show the carburetor jet set up. Gas for the high-speed jet is drawn from the tank in the conventional manner and the engine is adjusted to the desired speed for full throttle operation. The second fuel jet is an addition and this jet is fed from a second tank if a pressure-type tank is used for the high speed jet as in Brown's plane. Otherwise the gas can be drawn from the same tank through a second pick-up tube. The second jet has an additional air-bleed line soldered on the jet at the intake or fuel line end of the jet. The hole is drilled through the original jet tube after the brass tube is soldered in place.

A rubber or plastic tube is fed from this point back into the cabin at a level above the carburetor to a relay which opens and closes this line with a rubber stopper hooked to the relay armature. When the line is open at the relay end, air is drawn into the tube and gas is drawn into the engine only through the high speed jet. Upon closing the line at the relay end by radio signal, gas is drawn from the tank through the second jet in addition to the high speed jet. This produces a very rich mixture which causes the engine to lose speed even enough for two cycle operation which will permit the plane to lose altitude. Full speed is regained at any time by opening the air-bleed line, thus cutting off the flow of fuel to the second jet, since air will be drawn through the line easier than the fuel from the tank. Mixture adjustments can be made at the carburetor end which, if rich enough, will cut off power completely by over choking of the engine. A second air bleed line on the main or high speed jet is a more effective engine cut off. This method is used by Bonner with excellent results.

Operation of the two speed fuel line relay is achieved by installing a single lobe cam on the escapement shaft. This cam, made from a piece of brass tubing 1/8" outside diameter, is soldered to the shaft so the lobe will operate or close a set of contact points when the escapement is in one of the neutral positions. When these points close, they in turn close the circuit to the control relay, thus changing engine speed. If continual high speed operation is desired, this position is passed through when selecting turns and the engine remains in high speed. It is necessary to use a coil with from eight to 20 ohms of resistance to hold battery drain to a desirable figure. Four pen cells are used in the author's ship wired to furnish three volts. As many as 12 flights can be made on one set of batteries if a 10 ohm coil is used on the fuel line relay.

A second set up is possible by using a four lobe cam on the escapement shaft with the circuit *(Continued on page 52)*



Look for the new

TESTORS

DOPE DISPENSER in your favorite hobby shop!

Choose the colors you want from TESTORS DOPE DISPENSER . . . the self-vending display which shows the complete line of TESTORS 15c DOPE. And remember to insist on TESTORS DOPE — *by name!* It costs *a little* more, but is worth *a lot* more . . . that's why model builders from coast to coast—fellows who take pride in fine craftsmanship — have made Testors dope *the preferred dope* on the market. If you want FINE HIDING POWER . . . EASY APPLICATION . . . FILM TOUGHNESS . . . PURE COLOR BRILLIANCE . . . in a wide selection of popular and authentic colors . . . *you want TESTORS.*

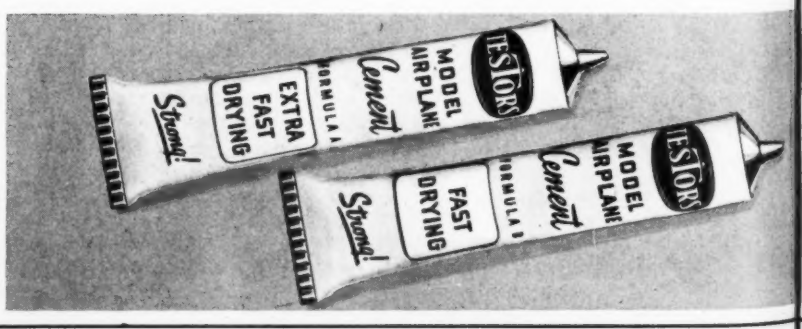
HELPFUL HINTS

Of the very few things Testors Cement will not adhere to, one of them is wax paper. This fact is definitely to your advantage during your building procedure. When you want to lay cemented parts aside to dry, you can place them on wax paper to prevent them from sticking to the top of your work bench. Instructions and drawing sheets can also be covered for protection; and you'll find that you will be able to read these sheets easily as the wax paper is very transparent when stretched. Wax paper should also be used to cover any table tops or other furniture that might be damaged by accidental spilling of cement or dope.

ARE YOU USING BOTH CEMENTS?

FORMULA "A" is *extra fast drying* for quick, easy construction of lightweight models and for on-the-spot repairs.

FORMULA "B" is *fast-drying* . . . the *strongest* for balsa or hardwood . . . for metal to metal . . . for metal to wood. It is your best bet for general work. Both available in 15c and 25c tubes.

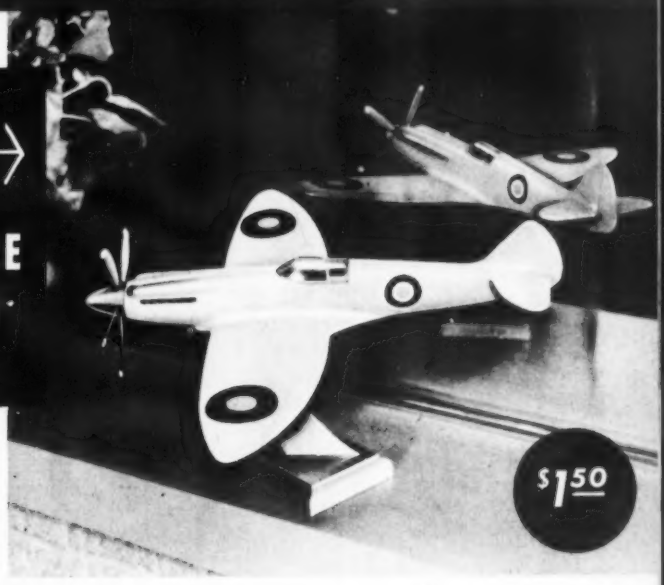


TESTORS TESTOR CHEMICAL COMPANY

BUILD THESE POPULAR DISPLAY MODELS

Your display model collection won't be complete without this history-making headliner from World War II. It's a true-scale beauty that's easy to build ... sleek in appearance ... thanks to molded balsa parts and Testor's exclusive Key-Lok assembly. Dimensions: wingspan—17-1/2"; overall length—16".

SPITFIRE MK-19



$1.50

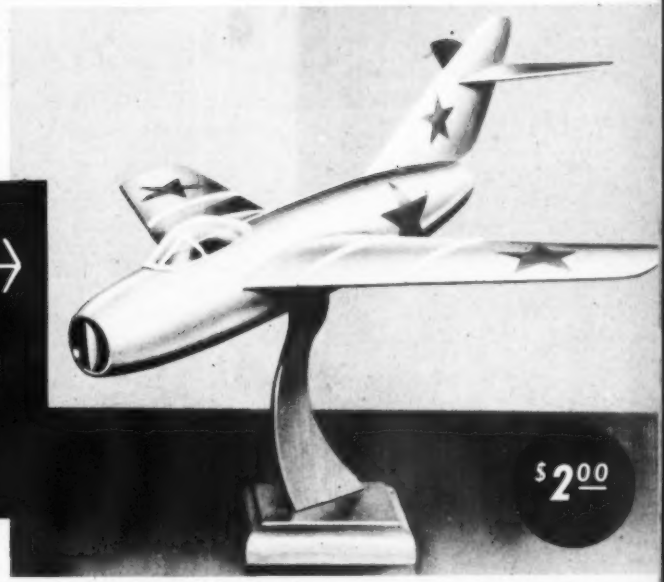
$2.00

F-86 SABRE JET

Right out of the skies over Korea to a prominent place among your display models! You'll find this F-86 Sabre Jet a masterpiece of detail and design ... complete with the same work-saving construction features that distinguish the other planes in this Testor series. Dimensions: wingspan — 17"; overall length — 19".

Here's another plane—the Russian Jet Fighter, MIG-15 — that's making front-page news in the air battles of Korea. You'll want this authentic scale model, too, for your collection. It will delight your friends ... give you new pride of craftsmanship. Dimensions: wingspan—15-3/4"; overall length — 16-1/4".

MIG 15



$2.00

FROM THE AUTHOR'S POINT OF VIEW, NO OTHER AIRPLANE IN U.S. AVIATION HISTORY HAS DONE MORE TO PIONEER AVIATION IN GENERAL, THAN THE CURTISS JN-4, "FIRST LOVE" OF WORLD WAR I PILOTS, AND MANY OF THE AVIATION GREATS OF TODAY. THE FAMED JENNY, THE DEPENDABLE WORK-HORSE OF THE GOOD OLD DAYS, HAS BEEN SEEN PLODDING ALONG AVIATION TRAILS IN MANY ODD AND VARIED GARBS, PERFORMING DUTIFULLY TO ALL THE UNLIMITED TASKS TO WHICH SHE WAS HARNESSED TO PULL, FROM HAULING WOUNDED, TO HAULING MAIL, FROM TRAINING PILOTS TO SURVEYING THE U.S. FOR MANY OF OUR PRESENT AIR TRUNKLINES. FROM AN ACTUAL FRONT-LINE AIR BATTLE OR TWO IN WORLD WAR I, TO MAKING PEOPLE'S HAIR STAND ON END AT BARNSTORMING AIR CIRCUSES AS LATE AS 1950! AND YET TODAY, OVER THIRTY FIVE YEARS SINCE THE JENNY FIRST ROLLED OUT OF THE CURTISS STABLES, THERE ARE NUMEROUS OLD TIMERS WHO WILL BE QUICK TO CONSIDERABLY BY THESE DRAWINGS IN RECONSTRUCTING FOR FLIGHT, SOME OF THE HULKS OF JN-4'S THAT HAVE LAIN DORMANT BUT NOT FORGOTTEN IN BARNS AND FIELDS OF YESTERYEAR. IT HAS BEEN TRULY STATED - IN PART, "THEY HAD A FIELD DAY PUTTING TOGETHER WHATEVER WINGS AND FUSELAGES

Span. 9'-8 5/8"

Span. 10'-3 1/16"

30°

30°

22°35'

33 3/8"

13°15'

6'-3 3/8"

STABILIZER & ELEVATOR OF THE JN-4, JN-4C & CANUCK.

STABILIZER & ELEVATOR OF THE JN-4A, B, D, D-2, 4H & JN-6H.

SQUARE CUT OUT CENTER SECTION OF JN-4A (PROD.) MODEL. STRAIGHT RODS TRAILING EDGE & C/C OF JN-4 GAP (MODEL). AB, 4C & CANUCK VERSIONS.

LOWER WING TRAILING EDGE

5° L.W.U. TO BODY IN JN-4, 4A (PROTOTYPE), 4C, 4H.W.

ROUND CUT OUTS OF JN-4D, D-2S, 4H & 6H.

THEY HAD LAYING AROUND, TIED THEM TOGETHER WITH BAILING WIRE, AND CALLED IT THE FIRST JENNY DESIGNATION THAT CAME TO MIND. BUT IT WOULD BE A JENNY, OF SORTS, YET WOULD FLY. HOW SUCCESSFUL WOULD THIS PRONE IS PRACTICED ON PRESENT DAY AIRCRAFT? IMAGINE A MAN WALKING FROM THE WINGTIP OF AN F-94C STARFIRE TO ANOTHER, IN FLIGHT! SUCH STUNTS ON JENNIES, WERE ROUTINE STEPS ON MILESTONES OF AVIATION PERFORMED SINCE THE DAYS OF THE BARNS ARE CIRCUS.

~ TABLE OF VARIATIONS. CURTISS BIPLANES TYPE JN-4 THROUGH JN-6H ~

ITEM.	JN-4 (CANADA)	JN-4A (PROTOTYPE)	JN-4B.	JN-4C.	JN-4D. (CANADA)	JN-4D. (PRODUCTION)	JN-4D-2 (PRODUCTION)	JN-4H.	JN-6H.
WING SPAN. UPPER.	43'-7 1/8"	34'-8 1/2"	33'-11 3/4"	34'-8 1/2"	34'-8 1/2"	33'-11 3/4"	33'-11 3/4"	27'-0"	26'-11"
WING SPAN. LOWER.	33'-11 3/4"	27'-3"	27'-3"	27'-3"	27'-3"	27'-3"	27'-3"	27'-0"	26'-11"
OVERALL LENGTH.	27'-10 3/8"	22'-3"	22'-3"	27'-10"	27'-10"	27'-10"	27'-10"	27'-08"	27'-10"
HEIGHT O.A.	9'-10 3/8"	10'-6"	10'-6"	9'-10"	9'-10"	9'-10"	9'-10"	9'-10"	9'-10"
CHORD.	59 1/2"	10'-6"	10'-6"	9'-10"	9'-10"	9'-10"	9'-10"	9'-10"	9'-10"
GAP.	61 1/2"	61 1/2"	62 7/8"	61 1/2"	61 1/2"	60 1/2"	61 1/2"	61 1/2"	61 1/2"
STAGGER.	10 1/8"	16"	12 7/8"	10 1/8"	16"	16"	16"	12 7/8"	16"
DIHEDRAL.	1°	4°	1°	1°					
TYPE ENGINE.	CURTISS OX5 90	OX-2. 90.	OX-2. 90.	OX-3. 90.	OX-5 - 90.			HISSO E 150 H.P.	
ANGLE OF THRUST.	0°	0°	0°			6° DOWN.	0°		0°
EXHAUSTS.	SHORT COLL. STOVE TYPE	SHORT COLL. STOVE TYPE	SHORT COLLECTIVE			SHORT COLLECTIVE		SHORT COLLECTIVE	
FLIGHT CONTROLS.	DUP. WIRES & EL. CABLES			MODIFIED TO STICK CONTR.			REVERTED TO STICKS.	STICKS.	
STARTING SYSTEM.									
RADIO INTERCOMM'S.	NONE.	NONE.	STICK & CABLE.	VERTICAL & DRAG STRUTS.		NONE.	NONE.	NONE.	
AIR FOIL.	EIFFEL 36			EIFFEL 36			EIFFEL 36		
WING C/E OUTLINE.	NO CUT OUT.	SQUARE CUT-OUT.	SQUARE CUT-OUT.	SAME AS JN-4.			SQUARE CUT-OUTS		
WING TIP OUTLINE.	POINTED	POINTED	POINTED	POINTED		POINTED	POINTED	POINTED	
TIP OUTLINE LOWER.	ROUNDED	ROUNDED	ROUNDED	ROUNDED		ROUNDED	ROUNDED	ROUNDED	
TIP EDGES.	SAME AS CHORD.	SAME AS CHORD.	SAME AS CHORD.	SAME AS CHORD.		SAME AS CHORD.	SAME AS CHORD.	SAME AS CHORD.	
ELEVATOR OUTLINE.	SAME AS TIPS.	SAME AS TIPS.	SAME AS TIPS.	SAME AS TIPS.		SAME AS TIPS.	SAME AS TIPS.	SAME AS TIPS.	
ELEVATOR BALANCE.	NONE.	NONE.	NONE.	NONE.		NONE.	NONE.	NONE.	
TYP. TAIL SKID.	EXTERNAL SPRUNG.	EXTERNAL SPRUNG.	EXTERNAL SPRUNG.	EXTERNAL SPRUNG.		EXTERNAL SPRUNG.	EXTERNAL SPRUNG.	EXTERNAL SPRUNG.	
WHEELS.	WOOD	WOOD	WOOD	WOOD		WOOD	WOOD	WOOD	
TYP. L.G. WHEELS.	30" SPOKE STANDARD.	30" SPOKE STANDARD.	30" SPOKE STANDARD.	30" SPOKE STANDARD.		30" SPOKE STANDARD.	30" SPOKE STANDARD.	30" SPOKE STANDARD.	
AILERONS	UPPER & LOWER (6)	UPPER & LOWER (6)	UPPER & LOWER (6)	UPPER & LOWER (6)		UPPER & LOWER (6)	UPPER & LOWER (6)	UPPER & LOWER (6)	UPPER & LOWER (4)

REMARKS: * 1. O.A. LENGTH: INSIGNIA AS THE FUSELAGES OF ALL JN MODELS APPEAR TO HAVE BEEN BASICALLY THE SAME, AND REMAINED UNCHANGED SO LITTLE. DIFFERENCES IN OVERALL O.A.L. IS BELIEVED DUE TO RUBBER CORD TENSION, OR TO MEASURING METHODS. 2. HEIGHT: MEASURED FROM LOWER WING RIB/POST TO GR. LEVEL. DIFFERENCES DUE TO GR. LEVEL, OVERINFLATED TIRES, OR TENSION OF LANDING GEAR SHOCK CORDS. 3. ENGINE EXHAUSTS: THESE ALSO VARIED CONSIDERABLY. LONG SIDES DISCHARGED ALSO. SOME UTILIZED HEAT FOR CARBURETOR, AND HEATING THE JN-4D PROD. ARMY MODEL USED SHORT STRAIGHT STACKS LIKE MOST CANUCKS & JN-6H. 4. FLIGHT CONTROLS: JN-4A & B DESIGN, S. AILERON INTERCONNECTIONS: ON MODELS A, C, H & 4H (VARIED). 4H, VARIOUSLY WIRE & STRUT. 6H, STRUT ONLY.

10 1/8" WING STAGGER SHOWN BELOW, USED ON JN-4, 4C & CAN., LOWER WING SAME LOC. 10 1/8"

LOWER WING SPAN, O.A. 33'-11 1/4"

UPPER WING SPAN. 43'-7 1/8"

16" WING STAGGER WAS USED ON JN-4A, B, D-2 PROTO, 4H & 6H.

16" LOWER WING POSITION, SAME IN ALL.

AILERON SPAN, 11'-8 3/16"

18"

SHOWN ABOVE ARE THE "POINTED" WING TRAILING TIPS USED IN THE JN-4A, 4C & CANUCK, AND JN-6H. STAGGER VARIED IN ALL ABOVE TYPES. ACTUALLY, THEY ARE THE JN-4C & CANUCK WINGS. EXHAUSTS AT RIGHT ARE ALSO CANUCK & ARMY VERSION JN-4-D-2 (PROD.)

SHORT, COLLECTOR EXHAUST OF JN-4A, B, C, D & D-2.

RED

BLUE

1/6 DIA.

1/6 DIA.

1/3 DIA.

WHITE

~ U.S. COCKADE. 1918 TO 1920 ~

INSIGNIA. THE LARGE STAR IN CIRCLE, ON WINGS ONLY, WAS USED ON U.S. "JENNIES" FROM MAY 1917 TO JAN. 1918, & PLACED IN FULL CHORD AT TANGENTS SHOWN ABOVE. ON JN'S WITH NO LOWER AILERONS, INSIGNIA WAS PAINTED UNDER LOWER WINGS DIRECTLY BELOW UPPER STAR. THE SAME APPLIED TO COCKADE (U.S. & CANUCK) SHOWN AT LEFT. RUDDER STRIPES WERE RED (AT TRAILING EDGE) WHITE & BLUE. IN JAN. 1918, THE U.S. CHANGED TO COCKADES, & REVERSED RUDDER STRIPES. SHIPS BUILT SINCE 1918 TO END OF WAR, USED COCKADES WITH RUDDER STRIPES BLUE AT TRAILING EDGE. IN 1920, THE U.S. WAS BACK TO USING STARS & AGAIN TURNED AROUND RUDDER STRIPES TO ORIGINAL RED AT TRAILING EDGE. THE SIZE & LOCATION OF U.S. POSTWAR STAR INSIGNIA IS ALSO SHOWN ABOVE, APPR. ONE DIAMETER INBOARD FROM TIP.

CONT. BELOW:

THE JN-4D WAS THE MOST PRODUCED & USED JENNY. THE CANADIAN JENNY, CALLED THE "CANUCK" & JN-4C, WAS BUILT IN CANADA (SEE PART 2) JN-4, 4A & B, BUILT IN QUANTITY FOR THE R.F.C., SEVERAL HUNDRED WERE SHIPPED OVER TO BLIGHTY.

PLAN & FRONT VIEWS ARE FOR JN-4-D-2 PRODUCTION JOB, EXCEPT FOR 16" STAGGER SHOWN, WHICH WAS 12 7/8" ON 4D2 PROD.

1 1/2" 26" 1 1/2"

ALL FLYING WIRES Ⓕ DOUBLED, & SPACED ON 8" CENTERS. LANDING WIRES Ⓛ SINGLE. LANDING GEARS ON EARLY JN'S EMPLOYED DOUBLE BRACE WIRES BETWEEN FRONT STRUTS.

Ⓓ = DRAG WIRE.

1" = 1'

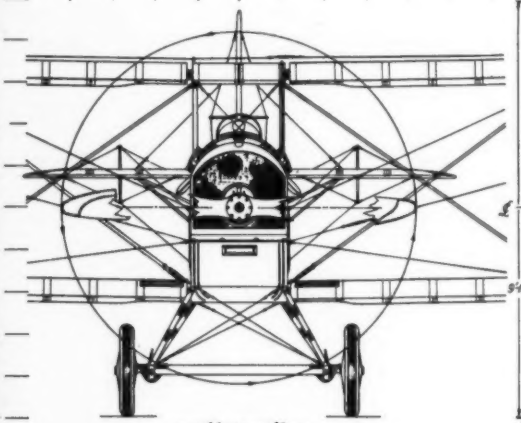
PROPELLER WAS AN 8'-4" DIA. WHITE OAK AIR SCREW MADE BY FLOTTORP MFG. CO. CHICAGO, U.S.A. SIX LAMINATIONS, BUILT UP TO 4 1/2" THICKNESS AT HUB, 7 1/8" DIA. ACROSS BLADES, 6 3/8" AT THE WIDEST POINT.

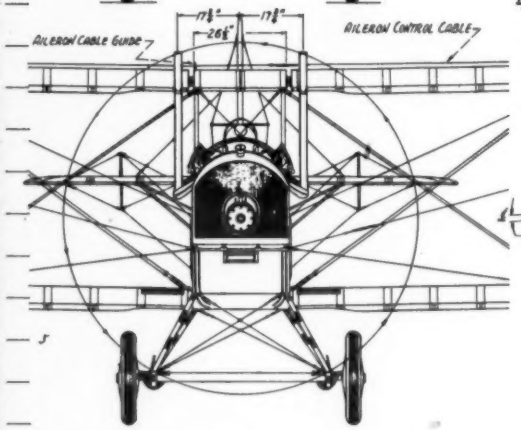
26"

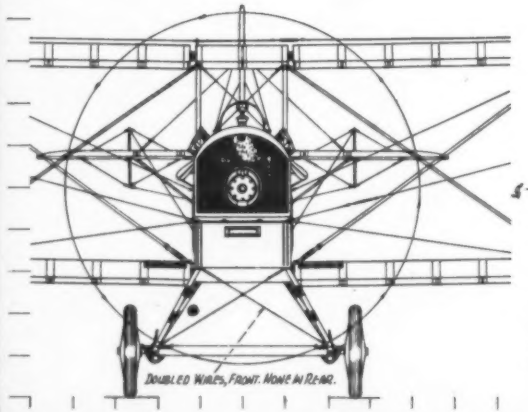
TRACK 63 11/16"

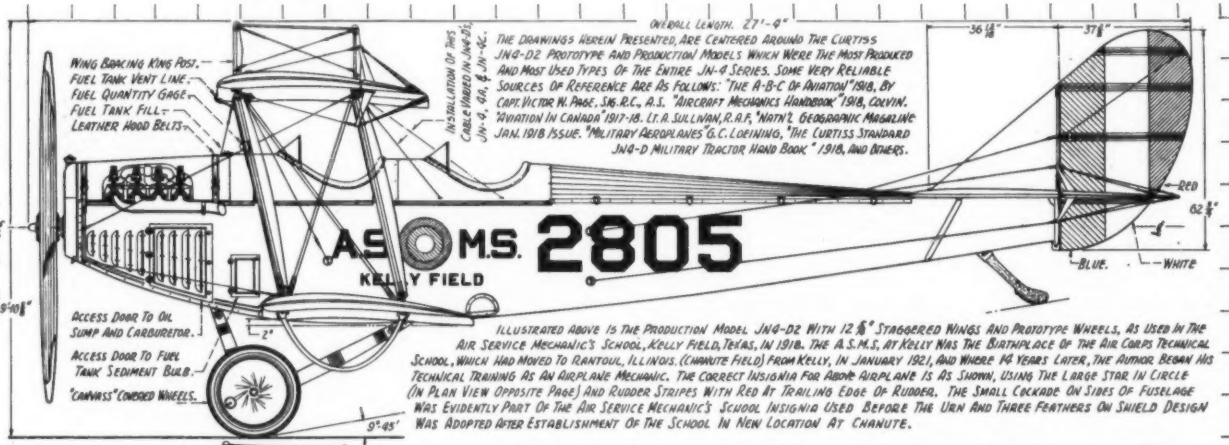
AFTER THE 1918 CHANGE TO COCKADES, MANY WINGS IN SERVICE WERE LEFT UNCHANGED. WING MAY HAVE HAD ONE INSIGNIA AND THE SHIP ANOTHER. COLOR SCHEMES & MARKINGS: DURING WORLD WAR I, JENNIES SPORTED CLEAR DOPED FABRIC, ALTHOUGH SOME LATE ONES WERE PAINTED ALL (TRAINER) YELLOW. U.S. NAVY POST WAR JN'S WERE SILVER, WITH YELLOW ON UPPER SURFACES OF TOP WING & HORIZONTAL TAIL PLANE. SOME ARMY JOBS WERE TRAINER YELLOW, OTHERS ALL OLIVE DRAB. (PRIMARY YELLOW, ADVANCED, O.D.!) COWLING MATCHED PAINT. ON CLEAR DOPED JOBS, COWLS WERE GENERALLY O.D. OR LEFT PLAIN METAL. JN'S USED FROM TWO TO FIVE DIGIT SERIAL NUMBERS ON FUSELAGE SIDES. SOME TIMES SMALL SERIAL NUMBERS WERE LOCATED AT TOP OF WHITE RUDDER STRIPE, PRECEDED BY LETTERS "SC" FOR SIGNAL CORPS. OTHERS USED THE "SC" & SER. NO., SMALL, JUST UNDER UPPER LONGERON, WITH LARGE TRAINER NUMBER BELOW.

SOME SHIPS EVEN FLEW WITH MIXED INSIGNIA. A SPARE & MARKINGS: DURING WORLD WAR I, JENNIES





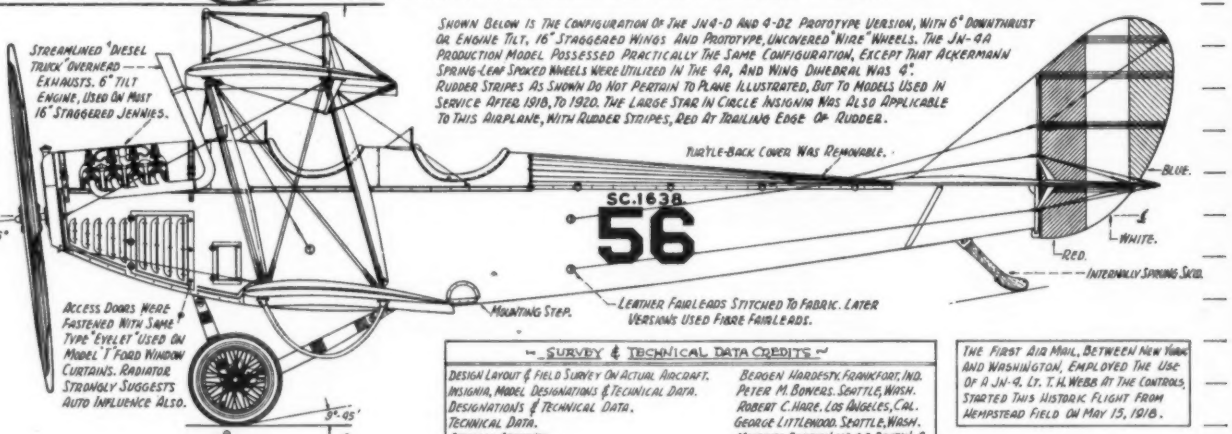




THE DRAWINGS HEREIN PRESENTED, ARE CENTERED AROUND THE CURTISS JN4-D2 PROTOTYPE AND PRODUCTION MODELS WHICH WERE THE MOST PRODUCED AND MOST USED TYPES OF THE ENTIRE JN-4 SERIES. SOME VERY RELIABLE SOURCES OF REFERENCE ARE AS FOLLOWS: "THE A-B-C OF AVIATION" 1918, BY CAPT. VICTOR W. PAGE, S.M. R.C., A.S. "AIRCRAFT MECHANICS HANDBOOK" 1918, COLVIN. "AVIATION IN CANADA" 1917-18. LT. A. SULLIVAN, R.A.F. "NATN'L GEOGRAPHIC MAGAZINE JAN. 1918 ISSUE. "MILITARY AEROPLANES" G.C. LOENING, "THE CURTISS STANDARD JN4-D MILITARY TRACTOR HAND BOOK" 1918, AND OTHERS.

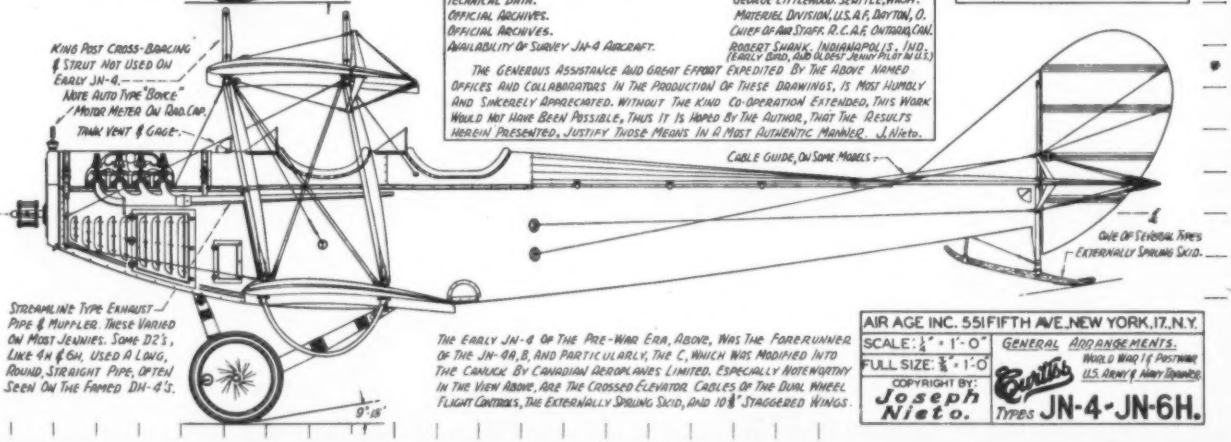
A.S.M.S. 2805
KELLY FIELD

ILLUSTRATED ABOVE IS THE PRODUCTION MODEL JN4-D2 WITH 12 5/8" STAGGERED WINGS AND PROTOTYPE WHEELS, AS USED IN THE AIR SERVICE MECHANIC'S SCHOOL, KELLY FIELD, TEXAS, IN 1918. THE A.S.M.S. AT KELLY WAS THE BIRTHPLACE OF THE AIR CORPS TECHNICAL SCHOOL, WHICH HAD MOVED TO RANTOUL, ILLINOIS. (CHANUTE FIELD) FROM KELLY, IN JANUARY 1921, AND WHERE 14 YEARS LATER, THE AUTHOR BEGAN HIS TECHNICAL TRAINING AS AN AIRPLANE MECHANIC. THE CORRECT INSIGNIA FOR ABOVE AIRPLANE IS AS SHOWN, USING THE LARGE STAR IN CIRCLE (IN PLAN VIEW OPPOSITE PAGE) AND RUDDER STRIPES WITH RED AT TRAILING EDGE OF RUDDER. THE SMALL COCKADE ON SIDES OF FUSELAGE WAS EVIDENTLY PART OF THE AIR SERVICE MECHANIC'S SCHOOL INSIGNIA USED BEFORE THE URN AND THREE FEATHERS ON SHIELD DESIGN WAS ADOPTED AFTER ESTABLISHMENT OF THE SCHOOL IN NEW LOCATION AT CHANUTE.


STREAMLINED "DIESEL TRUCK" OVERHEAD EXHAUSTS. 6" TILT ENGINE, USED ON MOST 16" STAGGERED JENNIES.
6°
ACCESS DOORS WERE FASTENED WITH SAME TYPE "EYELET" USED ON MODEL T FORD WINDOW CURTAINS. RADIATOR STRONGLY SUGGESTS AUTO INFLUENCE ALSO.
9°-45'
TURTLE-BACK COVER WAS REMOVABLE.
BLUE.
WHITE.
RED.
INTERNALLY SPRUNG SKID.
MOUNTING STEP.
LEATHER FAIRLEADS STITCHED TO FABRIC. LATER VERSIONS USED FIBRE FAIRLEADS.

SHOWN BELOW IS THE CONFIGURATION OF THE JN4-D AND 4-D2 PROTOTYPE VERSION, WITH 6° DOWNTHRUST OR ENGINE TILT, 16" STAGGERED WINGS AND PROTOTYPE, UNCOVERED "WIRE" WHEELS. THE JN-4A PRODUCTION MODEL POSSESSED PRACTICALLY THE SAME CONFIGURATION, EXCEPT THAT ACKERMANN SPRING-LEAF SPOKED WHEELS WERE UTILIZED IN THE 4A, AND WING DIHEDRAL WAS 4°. RUDDER STRIPES AS SHOWN DO NOT PERTAIN TO PLANE ILLUSTRATED, BUT TO MODELS USED IN SERVICE AFTER 1918, TO 1920. THE LARGE STAR IN CIRCLE INSIGNIA WAS ALSO APPLICABLE TO THIS AIRPLANE, WITH RUDDER STRIPES, RED AT TRAILING EDGE OF RUDDER.

SC.1638
56


KING POST CROSS-BRACING & STRUT NOT USED ON EARLY JN-4.
ABOVE AUTO TYPE "BONCE" MOTOR METER ON RAD. CAP.
TANK VENT & GAGE.
CABLE GUIDE, ON SOME MODELS.
ONE OF SEVERAL TYPES
EXTERNALLY SPRUNG SKID.
STREAMLINE TYPE EXHAUST PIPE & MUFFLER. THESE VARIED ON MOST JENNIES. SOME D2's, LIKE 4H & 6H, USED A LONG, ROUND, STRAIGHT PIPE, OFTEN SEEN ON THE FAMED DH-4's.
9°-18'

THE EARLY JN-4 OF THE PRE-WAR ERA, ABOVE, WAS THE FORERUNNER OF THE JN-4A, B, AND PARTICULARLY, THE C, WHICH WAS MODIFIED INTO THE CANUCK BY CANADIAN AEROPLANES LIMITED. ESPECIALLY NOTEWORTHY IN THE VIEW ABOVE, ARE THE CROSSED ELEVATOR CABLES OF THE DUAL WHEEL FLIGHT CONTROLS, THE EXTERNALLY SPRUNG SKID, AND 10 5/8" STAGGERED WINGS.

SURVEY & TECHNICAL DATA CREDITS

DESIGN LAYOUT & FIELD SURVEY ON ACTUAL AIRCRAFT.	BERGEN HARDESTY, FRANKFORT, IND.
INSIGNIA, MODEL DESIGNATIONS & TECHNICAL DATA.	PETER M. BOWERS, SEATTLE, WASH.
DESIGNATIONS & TECHNICAL DATA.	ROBERT C. HARE, LOS ANGELES, CAL.
TECHNICAL DATA.	GEORGE LITTLEWOOD, SEATTLE, WASH.
OFFICIAL ARCHIVES.	MATERIEL DIVISION, U.S.A.F., DAYTON, O.
OFFICIAL ARCHIVES.	CHIEF OF AIR STAFF, R.C.A.F., ONTARIO, CAN.
AVAILABILITY OF SURVEY JN-4 AIRCRAFT.	ROBERT SHANK, INDIANAPOLIS, IND. (EARLY BIRD, AND OLDEST JENNY PILOT IN U.S.)

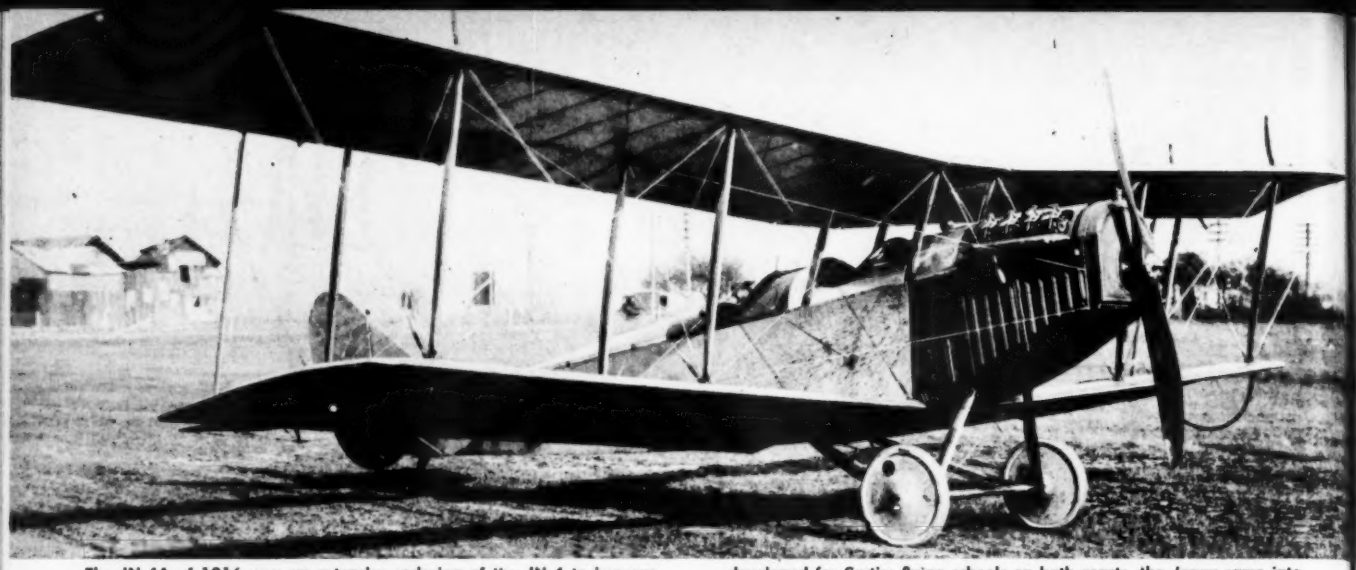
THE GENEROUS ASSISTANCE AND GREAT EFFORT EXPEDITED BY THE ABOVE NAMED OFFICES AND COLLABORATORS IN THE PRODUCTION OF THESE DRAWINGS, IS MOST HUMBLY AND SINCERELY APPRECIATED. WITHOUT THE KIND CO-OPERATION EXTENDED, THIS WORK WOULD NOT HAVE BEEN POSSIBLE. THUS IT IS HOPED BY THE AUTHOR, THAT THE RESULTS HEREIN PRESENTED, JUSTIFY THOSE MEANS IN A MOST AUTHENTIC MANNER. J. Nieto.

THE FIRST AIR MAIL, BETWEEN NEW YORK AND WASHINGTON, EMPLOYED THE USE OF A JN-4. LT. T. H. WEBB AT THE CONTROLS, STARTED THIS HISTORIC FLIGHT FROM HEMPSTEAD FIELD ON MAY 15, 1918.

AIR AGE INC. 551 FIFTH AVE. NEW YORK, 17, N.Y.
SCALE: ¼" = 1'-0"
FULL SIZE: ¾" = 1'-0"
COPYRIGHT BY: Joseph Nieto.

GENERAL ARRANGEMENTS.
WORLD WAR I & POSTWAR U.S. ARMY & NAVY TRAINERS.

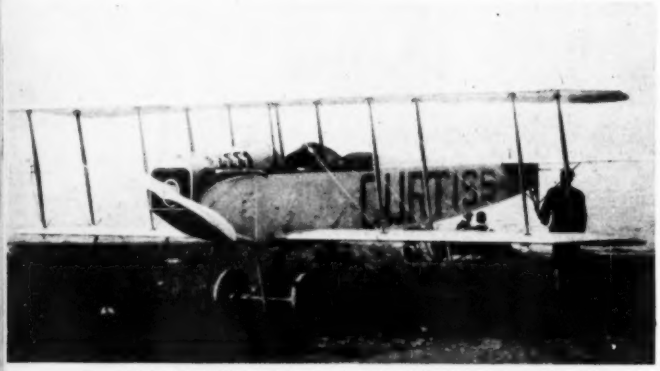
Curtiss TYPES JN-4-JN-6H.



The JN-4A of 1916 was an extensive redesign of the *JN-4* to improve stability and handling qualities. The "J" series dates to 1913. Originally developed for Curtiss flying schools on both coasts, the *Jenny* came into great demand with the outbreak of war in Europe. Over 4,500 built.

Performance of the *JN-4A* was about the same as the first Cubs of the early thirties. Top was 73 mph, with minimum flying speed of 43 mph.

To build the OX-5 engines for *Jennies*, Curtiss had to set up large scale motor manufacturing facilities.



For 1913, the "J" model wasn't a bad looking crate. The "N" was introduced shortly after—combined features of both went into the JN.

THE JENNY

by ROBERT C. HARE

Curtiss JN-4's were the AT-6's of World War I. So famous was the Jenny that it may still be remembered after the last AT-6 has since gone.

PART ONE

The historical airplane to be discussed this month and next is the famous Curtiss *Jenny*. This airplane, perhaps to a greater extent than any other, represents the sum total of U. S. World War I aviation development. There may be disagreement with this statement in view of the U. S. developed Liberty engine—a marvelous piece of machinery in its day—and the way our engineers took the British *DH-4*, re-designed it for mass production as it never had been produced before.

Our industry and our engineers made many important contributions to the cause, but to the *Jenny* goes the honor of being the most numerously produced purely American airplane design of W.W.I. More than 4,500 *Jennies* were manufactured for U. S. forces by Curtiss and seven other manufacturers; add to this the hundreds built in this country and in Canada for England and the British Empire air services.

The *Jenny* had her shortcomings, by today's standards; flew her best in the hands of a pilot who was wise to her peculiar habits. Yet *Jenny* would give a novice pilot more than an even break. "If you can fly a Jenny," an old saying went, "you can fly anything." The *Jenny* was designed to teach men to fly and nothing more was ever expected of her.

However clear cut the *Jenny's* wartime purpose may have been, her greatest fame actually came in the post-war years of the 1920's. By sheer numbers she invaded—and took over—the initial phases of American (*Continued on page* 42)

For The Fifth Consecutive Year...

First Again!

TOP FLITE MODELS INC.

19 1st PLACE WINNERS at the 1952 NATIONALS

USED TOP FLITES and POWER PROPS— MORE THAN ANY OTHER MAKE!

FREE FLIGHT GAS

Cl. B Junior
Lawrence Miles
Medford, Oregon
Perf. 15:30.9
Engine O & R 29
PROP 10/6 TOP FLITE
Plane Modified Cumulus
Fuel Spitzy

Cl. B Senior
Kenneth DeGioieus
Sacramento, Cal.
Perf. 12:41.8
Engine Torp 29
PROP 12/6 POWER PROP
Plane Sandy Hogan
Fuel Power Mist

Cl. B Open
Jack Smith
Santa Barbara, Cal.
Perf. 16:52.6
Engine O & R 23
PROP 10/6 TOP FLITE
Plane Amazon 400
Fuel O & R No. 2

Row Junior
Bruce Tune
Los Angeles, Cal.
Perf. 18:38.4
Engine Torp .049
PROP 6/3 TOP FLITE
Plane Smarty
Fuel Thimbledrome

Row Open
Elmer Scraggs, U.S.A.F.
Wichita Falls, Texas
Perf. 19:38.6
Engine Torp 29
PROP 10/6 TOP FLITE
Plane Zeek
Fuel X-Cell

Cl. ½A Junior
John F. Watson
Ft. Des Moines, Iowa
Perf. 19:09.2
Engine Torp
PROP 5¼/3 POWER PROP
Plane Half-Hay
Fuel Testor 39

Cl. ½A Senior
Matt Antonioli
San Diego, Cal.
Perf. 21:02.2
Engine Wasp .049
PROP 5¼/4 POWER PROP
Plane Zeek
Fuel Supersonic 1000

Cl. ½A Open
Wally Short
Redland, Cal.
Perf. 25:31
Engine Wasp .049
PROP 6/3 POWER PROP
Plane AWOL
Fuel O & R AA

Cl. C Senior
Bill Lofland
Abilene, Texas
Perf. 19:26.2
Engine Torp 32
PROP 10/6 TOP FLITE
Plane Original
Fuel Power Mist

CONTROL LINE

Precision Acrobatic Junior
Frankie Adams
Newark, Cal.
Perf. 325.66 pts.
Engine Fox 29
PROP 10/6 POWER PROP
Plane All American Sr.
Fuel Power Mist

Precision Acrobatic Open
John Lenderman
Tracy, Cal.
Perf. 364.33 pts.
Engine Fox 35
PROP 10/6 TOP FLITE
Plane Stuka
Fuel O & R No. 4

Combat Junior
Bobby Jones
San Gabriel, Cal,
Perf. 67 pts.
Engine Torp 19
PROP 9/6 TOP FLITE
Plane Bomb
Fuel O & R No. 4

Combat Senior
Tommy Winton
Chickasha, Okla.
Perf. 160 pts.
Engine Fox 35
PROP 9/6 TOP FLITE
Plane All American
Fuel Power Mist

Combat Open
D. N. Mallory
San Bruno, Cal.
Perf. 95 pts.
Engine Torp 32
PROP 10/6 TOP FLITE
Plane Sophomore 29
Fuel Power Mist

Flying Scale Open
Thomas Dean
Corpus Christi, Texas
Engine Dooling
PROP 10/6 POWER PROP
Plane Great Lakes Trainer
Fuel Supersonic 1000

PAA LOAD

Cl. AB Jr.-Sr.
Clinton Merrill
Oildale, Cal.
Perf. 16:54.2
Engine Arden 19
PROP 10/3½ TOP FLITE
Plane Crowbar
Fuel Supersonic 1000

Cl. AB Open
Fran Uyematsu
Montebello, Cal.
Perf. 23:53.4
Engine Torp 19
PROP 9/6 POWER PROP
Plane Modified Cumulus
Fuel Supersonic 1000

PAA ½A

Payload Jr.-Sr.
Paul Crowley
Detroit, Mich.
Perf. 9:15.8
Engine Wasp .049
PROP 6/3 TOP FLITE
Plane PAA-Master
Fuel Nitro X

NAVY ½A CARRIER

Control Line
Mr. & Mrs. Ray Randall
Colma, Cal.
Engine 2-Wasp .049
PROP 2-5¼/4 POW. PROP
Plane Grumman Sky Rocket
Fuel O & R AA

THE *Champs* USE THEM—WHY DON'T YOU?

Ask your favorite dealer for a FREE TOP FLITE PROP CHART . . . or write to TOP FLITE for one . . . tells you the size and pitch of prop to use with your engine and airplane.

TOP FLITE MODELS INC., 2635 S. Wabash Ave., Chicago 16, Ill.

1952 WAKEFIELD

This pictorial impression of the world's toughest contest is the work of Bill Fletcher who went to Sweden with the American team. A wonderful contest, is the report.

Arne Blomgren, right, and Sune Stark, hold aloft 1952 and 1951 winners respectively. Blomgren's ship differs from 1951 winner in its straight dihedral, and under-rudder. Blomgren is from Sweden.

Winners, standing, left to right—Joe Bilgri, fifth; Arne Ellila, Finland, third; Arne Blomgren, first; Jan Nilborn, Sweden, second; Silvano Lustrati, Italy, fourth; seated is Col. Cervell, of the Swedish Air Force.

Below—Mrs. Elsa af Uhr, wife of Swedish Air Force general, presents fifth-place prize to Joe Bilgri, of San Jose, California. Glass cup given to place winners is product of famous Swedish craftsmen.

The 1952 Wakefield contest finals, held in Sweden, were outstanding. Sweden's sweep of first and second places, thanks to Arne Blomgren and Jan Nilborn, plus Sune Stark's win in 1951, plus Arne Ellila's wins in 1950 and 1949, proved that the Scandinavians are model fliers second to none, and that, for local weather conditions, they still build more adaptable ships than the rest of us. Lady Luck played a surprisingly big part in a contest that is supposed to rule out luck. Luck didn't help the Swedes, but it jinxed some other people. Had Gunther Maibaum, Germany, got back his lost ship and turned in a third perfect flight, all roads would lead to Germany in 1953. One must not detract from the Swede's clear-cut, well deserving victory. But innocently enough, the contest rules did discomfort fliers from strange countries. Since flying was not in rotation, individual fliers held off for desirable breaks in the weather. This proved a tough guessing game for more than one entrant. Rotation undoubtedly will apply next year. A significant side light was the crucial part played by lost airplanes, or planes returned damaged. This could apply to Swedes as well as anyone else, so really points up the fact that present Wakefield rules may reduce luck from thermals but vastly increase the same element in placing as much importance on the chasers as the pilots. This, of course, is a fallacy of all free flight contest rules. Talk was heard of team showings, and, in this mythical category, the U. S. would have done very badly indeed. The British, the French, to name two, were well ahead of us. The French were amazingly consistent as a group. Individual showings found Italy in the first five as usual. Will it be Italy that finally takes the trophy from the north lands? Joe Bilgri could have been a real threat had he been able to make three flights on his number one job.

Gunther Maibaum, Germany, was 21st on two flights, lost model. Perfect third would have won.

Bilgri packing in turns while Ed Lidgard holds. Joe did maximum time at 3 p. m., lost model. Completed flights with *Duster*, February MAN. Joe's first model was the only U. S. ship which used gears.

One of the more interesting, but ill-fated designs, was plane of Rudolph Melzer's, Germany.

Switzerland's Traugott Haslach with a typical Swiss model. The Swiss use the folding type of propeller, and lean toward two or more rudders and fixed landing gears. Traugott 13th; total, 9:45 minutes.

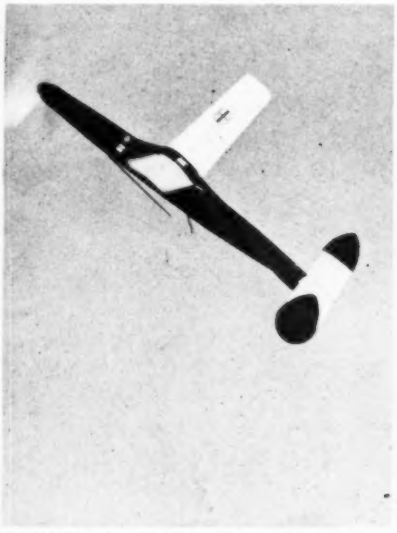
From Trinidad came Bert Bland, with three smashed ships. Efforts won applause from all.

Seventh man in this team picture is Nils Testor, standing center. L to R—Syd Seldon, Joe Bilgri, Cliff Montplaisir, Carl Perkins, Jim Tangney, Ed Lidgard. Visiting home country, Nils took in contest.

One of the best scoreboards yet seen was Swedish recording system. Signs painted inside truck, hung out to give immediate standing each flight.

Jan Nilborn congratulates fellow Swede Arne Blomgren. Arne's times: 210, 300, 300 for 810 total. Jan's: 203, 286, 286, a 789 total. Sweden '53, too?

Man who stayed for dinner, Adrian Bryant. He hitch-hiked from Australia 1951, didn't go home.



Roy Nicole, Great Britain, off to good start. Lost model on second round, took 33rd in 7:04 total.

Ron Warring winds, Ted Evans holds. Both Britishers hit third flight downdrafts; 589, 621.

Giulio Pelegi, Italy, releasing his ship for unassisted take-off required by rules. In 1949, Italians were second, fourth in 1952. Usually up high.

France placed all five men within first 19. Here, Rene Jossien winds 19th place job that ran up total of 521. Good team work from the French group.

the WILDCAT
*See Note
$4.45

the BOBCAT
$3.95

the COUGAR
$6.95

the MUSTANG
$6.95

KENHI

CIRCLE OF WINNERS

THE FINEST QUALITY SEMI-SCALE FLYING MODELS

Look at these Features!

★ BEAUTIFULLY DESIGNED
"They look like real airplanes"

★ DESIGNED BY "HI" JOHNSON
Backed by 20 years of experience in designing contest winning models. Co-designer of the GO DEVIL. Designer of the CHIEF, WARRIOR, SQUAW, COMANCHE, BRAVE, SIOUX, and many others.

★ KWIK-LOK CONSTRUCTION
All parts are die-cut, formed and fit together with ease.

★ ILLUSTRATED PLANS
Step-by-step drawings make KENHI Models easy to build for the novice or experienced modeler.

★ DESIGNED FOR FLIGHT
Aerodynamically correct for stable flight and ease of maneuvering for the novice or experienced modeler.

★ KITS INCLUDE
Bell Crank • Control Horns • Control Rod Keepers • All Controls and Lead-out Wire • Hinges • Formed Landing Gear • Motor Mounts • Screws • Die-cut Windshield • Fully Pre-Fabricated Wood • All Detail Parts Die-cut • Decals • Wing Covering • Complete Instructions.

the BEAVER
$2.95

Easy-to-Build
Easy-to-Fly

NOTE: The KENHI "WILDCAT" although handicapped 40 points, because it wasn't painted, and on its third flight, won the first contest it was ever entered in. The 1952 National Orange Show Contest, San Bernardino, Calif. "Wildcat" flown by Frank Dawson, Van Nuys, Calif.

SPECIFICATIONS	WILDCAT	BOBCAT	COUGAR	MUSTANG	BEAVER
Wing Span	39 in.	39 in.	51 In.	48 In.	44 In.
Length Overall	30¼ In.	30¼ In.	36¼ In.	36½ In.	26 In.
Wing Area	330 Sq. In.	387 Sq. In.	412.5 Sq. In.	372 Sq. In.	233.375 Sq. In.
Fap Area	55 Sq. In.		137.5 Sq. In.	84 Sq. In.	
Total Wing Area	385 Sq. In.		550 Sq. In.	456 Sq. In.	
Air Foil	HJ-03515	HJ-03515	HJ-03515	HJ-04015	HJ-10400
Finished Wt. (Approx.)	2¼ Lbs.	2 Lbs.	2¾ Lbs.	2½ Lbs.	6 Oz.
*Wing Loading	.093 Oz.	.083 Oz.	.084 Oz.	.087 Oz.	.0257 Oz.
*Wing Loading with Occupant					.0428 Oz.
Class	A-B Eng. .10 to .35	A-B Eng. .10 to .35	B-C Eng. .29 to .50	B-C Eng. .29 to .50	½A
Type	Full Stunt	Stunt Trainer	Super Stunt	Full Stunt Scale	½A PAA Lead

*Per Sq. In. (Approx.)

Manufactured by

KENHI MODEL PRODUCTS Burbank, California

Fly With KENHI
See Your Dealer

Aboard the *Small Fry*, Shorty Wright, Dick Enos, show Stearman to Admiral T. S. Combs, Chief, Buair; Capt. Drews, Commanding, N.A.S.

1952 Nationals

These flash results of the 21st Nationals (Los Alamitos, Calif.) will be followed in November issue by seven pages of extraordinary photographs by Virgil Cone, inside stories of men, ships, by Jim Saftig and Bill Winter.

Violet Hoyt, women's champ, was one of many girls who made real dent in men's "mastery." Violet won the jet even with 144.23 mph.

WHO WON?

National Champ.....Joe Foster, Jr.
Senior Champ.....Barry Robertson
Junior Champ.....Don Puskarich
Women's Champ.....Violet Hoyt
Club Champ.....Oakland Cloud Dusters

▼

INDOOR

Stick: Open—Bill Atwood, 27:52.0; Sr.—Darrell Larks, 18:10.4; Jr.—Frank Cummings, Jr., 22:51.8.

Cabin: Open—Frank Cummings, Jr., 21:47.2; Sr. —William Poesch, 0:50.0; Jr.—John Tapert, 1:08.0.

Hand-launched glider: Open—Joe Foster, 1:13.6; Sr.—Don Alberts, 1:04.1; Jr.—Jerry Robertson, 1:13.6.

GLIDER

Hand-launched glider: Open—William Lopez, 21:09.2; Sr.—Harry Robertson, 21:10.2; Jr.—Jimmie Jackman, 11:14.0.

Towline: Open—Marvin Foreman, 14:58.0; Sr.—John Bollinger, 11:03.0; Jr.—John Watson, 8:36.2.

RUBBER

Wakefield: Open—T. R. Quermann, 15:00.0; Sr.—Don Tune, 12:04.2; Jr.—John Sawyer, 5:20.6.

Unlimited: Open—Frank Heeb, 17:06.8; Sr.—Bruce Strohlow, 13:34; Jr.—Eddie Ryan, 8:23.4.

FREE FLIGHT

Half-A: Open—Wally Short, 25:31.0; Sr.—Matt Antonioli, 21:02.2; Jr.—J. Watson, 19:09.2.

Class A: Open—Elmer Scraggs, 25:57.0; Sr.—B. Gelvin, 21:40.8; Jr.—Gene Huston, 23:30.8.

Class B: Open—Alvin Smith, 16:52.6; Sr.—Kenneth DeGioieus, 12:41.8; Jr.—Lawrence Smiles, 15:30.9.

Class C: Open—Chester W. Ogborn, 25:43.2; Sr.—Bill Lofland, 19:26.2; Jr.—John Mitchell, 19:22.8.

R.O.W. Open—Elmer Scraggs, 19:38.6; Sr.—Bob Gelvin, 16:37.0; Jr.—Bruce Tune, 18:38.4.

Half-A Scale: Open—Louis R. Culler, 309 pts.; Sr.-Jr.—Tommy Hill, 136 pts.

CONTROL LINE

Speed A: Open—George C. Mueller, 131.77 mph; Sr.—Mark Brown, 117.18 mph; Jr.—Bobby Paty, 104.65 mph.

Speed B: Open—Frank J. Stone, 131.77 mph; Sr.—Mark Brown, 130.15 mph; Jr.—Don Stupar, 110.90 mph.

Speed C: Open—Clem & Beasley, 135.13 mph; Sr.—Mark Brown, 125.17 mph; Jr.—Eddie Powers, 92.72 mph.

Speed D: Open—Herman Shiman, 150.62 mph; Sr.—Leland Ward, 142.51 mph; Jr.—James Stewart, 133.03

Jet: Violet Hoyt—144.23 mph.

Stunt: Open—John Lenderman, 364.33 pts.; Sr.—George Aldrich, 379.66 pts.; Jr.—Frankie Adams, 325.66 pts.

Flying Scale: Open—Thomas Dean, 280.80 pts.; Sr.—Barry Robertson, 227.13 pts.; Jr.—Ted Trammel, 177.80 pts.

Combat: Open—Davis Mallory, 95 pts.; Sr.—Tommy Winton, 160 pts.; Jr.—Bobby Jones, 72 pts.

RADIO CONTROL

Alex Schneider—261.8 pts.

TEAM RACING

Granger Williams—115 pts.

PAYLOAD

Rubber-powered: Mal Alberts—194.1 seconds.

Cargo Half-A: R. E. Latham—17¼ ounces.

Class AB: Open—Fran Uyematsu, 25:53.4; Sr.-Jr.—C. Merrill, 16:54.2.

Half-A: Open—Richard Sladek, 26:09.0; Sr.-Jr.—Paul Crowley, 9:15.8.

U. S. NAVY CARRIER

Open: Donald E. Yearout—388.08 pts.
Mr. & Mrs. Ray Randall—288.86 pts.

Pee Wee Patrol

(Continued from page 15)

Mr. Mayo Taylor, Erlanger Councilman, and another member of the church who enjoys working with the group, believes that busy boys are happy boys and would like to see more of the older boys and fathers attend the class. He even thinks the girls might enjoy taking up the hobby. Mr. Taylor quotes his wife, in charge of the local library, as saying, "The demand for books, the better books, on aeronautics and planes has increased greatly since forming of the class. The young readers thirst for more knowledge on all phases of aviation."

Denny Bungenstock, ten-year old enthusiast, is constructing the oddest craft in the group. "She's a blue and yellow Baby "Di-Doe" with 21" top and 18" bottom wing. Gonna put the motor on it that Dad gave me for Christmas, when she gets finished," Dennis explains professionally.

Contests were held last October among the members. Local merchants supplied the prizes and over $40.00 in cash was awarded winners. Mr. Brown, in soliciting the prizes, says the money was donated so readily and so generously that it scared him. The contests greatly increased the class interest and the boys promise much keener competition in the future.

During good flying weather, the club has been using a vacant corner lot, where trees and wires have curtailed flying and caused destruction of many models. All the hard work and effort destroyed in a few minutes of flying tends to dishearten and discourage some of the lads. The Erlanger Athletic Commission hopes to remedy this situation by donating to the class a plot of cleared ground to the boys for practice and soaring events.

Juvenile delinquency is unknown in this town. Erlanger's Air-Arm might, the Pee-Wee Patrol, is in the skies growing better and ever larger. With Captains Poston, Brown, Taylor at the controls, the squad is certain of Happy Landing.

Planes In The News

(Continued from page 5)

MiG which was dissected for the USAF was built in 1948 at Kuybyshev. (The German-language aviation magazine *Flugwelt* says that the Kuybyshev number one works—the Stalin works, as you might expect—had a production rate between 60 and 68 jet fighters per month at the beginning of 1951, according to the magazine's best sources.)

Conventional Fighter—As must be apparent to everyone by now, there is nothing unusual about the *MiG*. It is a straightforward, sound design which uses conventional detailed design and engineering practices. It is built in the customary manner.

If there is any salient difference between the *MiG* and any UN counterpart, it is in the amount of equipment included. The two tons of weight difference between the *MiG* and the *F-86* is largely weight of equipment, probably electronic devices of one type or another.

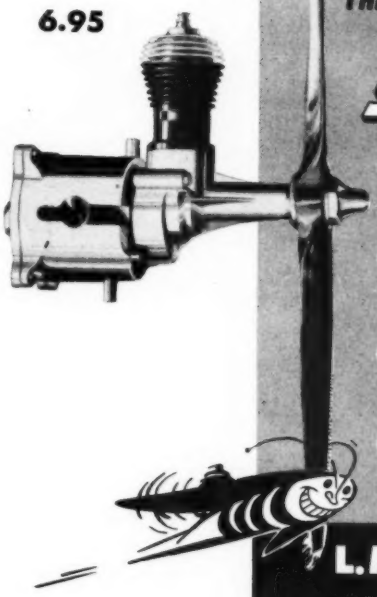
The *MiG* wing is a fairly thick one, with average airfoil section thickness ratio being 11 per cent. Conventional control surfaces are mounted. There are boundary-layer control fences fastened to the upper surface of the wing panels, a pair on each side. (These normally act to prevent boundary layer from sliding sideways on the swept wings and lousing up the aileron control effectiveness.)

Wing structure is two-spar, with these members running spanwise along constant percentage chord lines. The aft spar runs straight; the forward spar breaks at the landing gear hinge to allow room for the wheel.

A steel carry-through structure is the metal guts of the *MiG*. It holds the two wing panels

(Continued on page 41)

Do you know?



This is what you can do with a Thimble-Drome .049

SPACE-BUG

1. Fly a pusher type plane using a standard propeller.
2. Avoid torque on multi-motor jobs by running left hand engine with left hand prop in opposite direction.
3. Develop 20,000 r.p.m. using a plasticote 5" 3 pitch prop with less than 15 min. break-in time.
4. Fly full stunt pattern with many of the planes designed for .09 engines.

AT YOUR DEALER'S

L.M. COX Mfg. Co., Inc.

SANTA ANA, CALIFORNIA

FULL-SIZE PLANS

EACH SET OF 2 PLANS FOR 25c

MAILING INSTRUCTIONS. IMPORTANT! Add 5c for postage and packaging on orders mailed 3rd Class.

For First Class add 10c for postage and packaging and for Air Mail add 15c for postage and packaging, for EACH set of TWO plans. Plans available only in groups of 2 as listed.

MODEL AIRPLANE NEWS PLAN DEPT.

551 Fifth Ave., New York 17, N. Y.

- ☐ Enclosed is 25c for full-size plans of "Gyrator" & "Aeronut."
- ☐ Also 25c for full-size plans of "The Bounder" and "Zephyr."
- ☐ Also 25c for full-size plans of "The Snapper" & "Dieselaire."
- ☐ Enclosed is 25c for full-size plans of "The Nobler" and "Funster."
- ☐ Also 25c for full-size plans of "Sky Wing" and "Challenger."
- ☐ Also 25c for full-size plans of "Hotter 'n That" and "Super Saucer."
- ☐ Also 25c for full-size plans of "El Diablo", "Tri-Pacer" and "Play Plane."
- ☐ Also 25c for full-size plans of "Beaver" and "Zenith."
- ☐ Also 25c for full-size plans of "Half Wild Goose" and "Firecracker."

Name (please print)

Address

City Zone State

GYRATOR, pg. 13 & AERONUT, pg. 17

Also Available—

BOUNDER: For those interested in speed flying. Herb Davis' double Natl. record holder. (Sept. '52 issue.)

ZEPHYR: Famed designer Sal Taibi's easy to build, high performance ½-A free-flight. (Sept. '52 issue.)

THE SNAPPER: Sensational performance from a Half-A stunter. Simple, all-balsa construction with flexing wing. (July '52 issue.)

DIESELAIRE: Cute, easy-to-make sport free flight for small diesels and glow engines. Will make many flights. (July '52 issue.)

THE NOBLER: George Aldrich's stunt job; the Plymouth finals winner. Tops in realism and a smooth flier. (June '52 issue.)

FUNSTER: Lud Kading's flea-sized free flight that wowed the Nationals. Features all-balsa construction. (June '52 issue.)

SKY WING: Successful free flight sport wing featuring sweep forward; AA engine. (May '52 issue.)

CHALLENGER: Team racer by Leon Shulman that did over 60 laps on diesel. (May '52 issue.)

HOTTER 'N THAT: Fox-powered, light-weight stunter designed for combat. (Apr. '52 issue.)

SUPER SAUCER: Thoroughly tested towline glider for real soaring. (Apr. '52 issue.)

EL DIABLO: A distinctive stunter for engines of .19 to .35 displacement. (March '52 issue.)

TRI-PACER & PLAYPLANE: Here are two jobs. The Tri-Pacer is a scale U-control Piper for .065-.90's; the Playplane is an all-balsa free flight bipe for .049's. (March '52 issue.)

BEAVER: Sturdy, easy to build control line model of Canadian "bush" transport. For .19 to .29 engines. (Feb. '52 issue.)

ZENITH: Class A free flight winner at '51 Nats. Cabin type job designed by Sal Taibi. (Feb. '52 issue.)

HALF WILD GOOSE: An extraordinary Half-A free flight that won 11 firsts during 1950 including its event at the Natls. (Dec. '51 issue.)

FIRECRACKER: A flying scale U-control model of a famous racer; excellent for team racing. (Dec. '51 issue.)

Regular members of the Simcoe, Ontario, Model Airplane Club show interest in several types.

official news

by RUSS NICHOLS and CARL WHEELEY

Wakefield Results • U.S.A. may have set three F.A.I. records • National AMA Records • The Contest Calendar

SWEDEN WINS WAKEFIELD AGAIN. Blomgren, flying for Sweden in the Wakefield finals held in Sweden July 10-14, was top man with a total of 810 seconds. Close behind him with a total of 789 seconds was one of his own team members, Nilborn. Ellila, who has won the Wakefield Cup twice for Finland, was third with a total of 775 seconds, and Lustrati from Italy was fourth with a total of 704.

Top U. S. man was Joe Bilgri from San Jose, Calif., who placed fifth with a time of 695 seconds. Clifford M. Montplaisir of Richmond, Va., was tenth; Ed Lidgard of South Bend, Ind., was 28th; Jim Tangney of Newport, R. I., was 36th; Sydney Seldon, Jr., of Tacoma, Wash., was 54th, and Carl Perkins, Jr., of Mission, Kans., was 67th.

We learn from Wakefield Committee Chairman Bill Fletcher of some of the tough luck which plagued our team and lowered our placing. Joe Bilgri's first model (a geared job, so we are told) went out of sight on the first flight and was brought back broken, some time later. His second model (a longie) was lost permanently in the second round and is still in Sweden. Unfortunately, Joe's first model did not fly so well when repaired for the third round. Rubber and fuselage breaking also plagued our team. Lidgard's model was badly damaged when the motor broke while winding and the fuselage of Tangney's model collapsed after the model was placed on the launching platform ready for take-off.

We should not feel too badly about our team's placing, though, for other consistently high placing countries such as England, whose highest placing man was Ted Evans with 621 seconds giving him ninth, did no better.

The weather in Sweden, so we are told, was not as good as could be hoped for. Fairly heavy winds, coldness, and dampness prevailed. The first round was postponed due to rain.

Strict adherance to Wakefield rules in Sweden was not absolutely followed in that a contestant could fly his model anytime during the time alloted for a specific round, instead of drawing numbers for flying order. It has been recommended that the latter method be used next year and that the entire organization of the contest be tightened. Although we don't know whether it is a record, 18 countries were represented this year; a very high number.

It is with extreme sorrow that we report the death of John Bollinger. He suffered a fatal heart attack on Sunday, July 6, at his home in Long Beach, California.

Early this year, he accepted the directorship of the 1952 National Model Airplane Championship Contest held at the Naval Air Station, Los Alamitos, from July 27 through August 3. From that time until his untimely death, he worked unceasingly to lay the groundwork for what was the best organized National Contest in the history of model aviation. The loss of John Bollinger is a blow to model aviation.

THREE F.A.I. RECORDS BELIEVED ESTABLISHED BY U. S. As a result of the F.A.I. record trial held for control line models at San Diego, Calif., on June 21 and 22, AMA is submitting to F.A.I. requests for homologation of three world "class" records.

These consist of flights of 138.222 mph for Flying Wing Jet Models, R.O.G., Control Line Speed by M. G. Hoyt of San Diego; 55.980 mph for Flying Wing Gas Models, R.O.G., Control Line Speed, Class I by Harold Ledington of San Diego; and 103.188 mph for Flying Wing Gas Models, R.O.G., Control Line Speed, Class II by R. G. Lambert of San Diego.

A fourth flight of 141.52 mph for Orthodox Jet Models was going to have been submitted to F.A.I. but we just received word from H. R. Gillman, F.A.I. Director General, that Czechoslovakia has recently applied for a record in this class which exceeds ours by a slight margin.

NATIONAL AMA RECORDS ESTABLISHED. Outdoor Hand-launched Gliders, Class A Junior—8:50.0. Record established by Bill Maxey, Albuquerque, N. Mex., on June 22, using a glider designed by Jim Taylor. The model has a wing with span of 17-3/4", 3" chord, and eliptical tips; eliptical stabilizer with span of 8-7/8" and chord of 2-7/8"; and fuselage length of 18-3/8".

Outdoor Hand-launched Gliders, Class A Senior—22:21.4. Record established by Gene Jackman of Oklahoma City, Okla., on June 29, using a model designed by Ray Matthews, "Fugan," the design which Ray used in setting the Open record last year.

Free Flight Gas Models, Class AA Junior—29:49.8. Record established by Dave Hewitt, Portland, Ore., on June 22, using an original design powered by a *Wasp .049* with 6"D x 3" P prop. The model has a wing with span of 38", 5-1/2" chord, NACA 6409 airfoil, and rectangular planform; stabilizer span of 20", 5-1/2" chord, and rectangular planform; 35" overall fuselage with sheet box construction and minimum cross-section; and underslung rudder mounted to fuselage. The model weighed in at 5 ozs.

PAA Load Models, Class AB Senior — 9:45.0. Record established by Roger L. Barron, Springfield, Va., on July 6, using original fuselage and tail assembly and a 56" *Powerhouse* wing. The model is powered by a K & B *Torp 19* using a *Power Prop* 9" D x 6" P. Fuselage length is 35-1/2" and the "occupant" is carried at the center of gravity. Elevator span is 25" and chord is 7". Twin rudders are used with area totalling 70 sq. ins. A single wheel take-off gear is used and the model, complete with "occupant," weighed in at 39 ozs.

NEW F.A.I. RECORDS. *Orthodox Rubber-powered Models, R.O.G., Duration* — 1 hr., 27 mns., 17 secs. Record established by Michel Kiraly (Hungary) on August 20, 1951.

Orthodox Gas Models, R.O.W., Control Line Speed, Class II—98.362 km/h. (50.012 mph). Record established by Vladimir Vassiltchenko (Russia) on October 28, 1951 using a K 16 motor of 4.4 cc. displacement.

Special Gas Models (having other than fixed lifting surface(s), R.O.G. Control Line Speed, Class I—85.714 km/h. (53.260 mph.) Record established on December 9, 1951 by Tibor Gall (Hungary) using a model powered by a *Super Tigre* motor of 2.47 cc. displacement

Special Gas Models, R.O.G., Control Line Speed, Class II — 111.801 km/h. (69.470 mph). Record established by Bela Jancso (Russia) on October 14, 1951 using a *Super Tigre* engine of 4.82 cc. displacement.

CONTESTS

SEPTEMBER

1—*Far Hills, N. J.* Class AA Bedminster-Far Hills Lions Club 5th Annual Control Line Meet for control line speed, stunt, beauty, and team racing. C. Norman Welsh, Contest Director, Dumont Rd., Far Hills.

7—*Lumberton, N. C.* Class AA Lumberton Model Airplane Contest for control line scale, stunt, and speed. Randolph C. Stone, C.D., 1906 Rowland Ave., Lumberton.

7—*Defiance, O.* Class AA Maumee Valley Model Airplane Meet for control line stunt, speed, free flight gas, and radio control. Arnold G. Schilperoot, C.D., R. F. D. 1, Defiance.

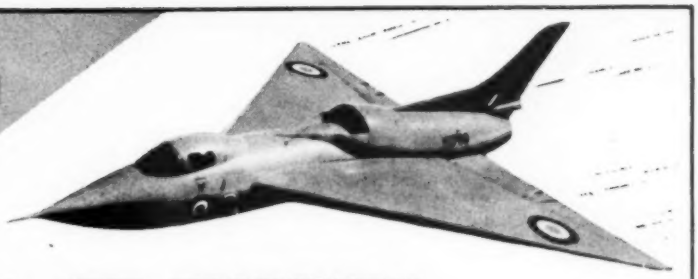
7—*Hartford, Conn.* Class AAA Connecticut Control Line Championships for control line speed, stunt, flying scale, and combat. Richard Matava, C.D., 358 Prospect Ave., Hartford.

14—*Woonsocket, R. I.* Class A Fall Roundup for free flight gas, outdoor rubber, control line speed, stunt, outdoor hand-launched glider, and tow glider. Entry is restricted to members of the Flying Fools Model Airplane Club. Thaddeus W. Wenclawik, C.D., 204 Lincoln St., Woonsocket.

14—*Akron, O.* Class AAA Akron Society of Model Plane Engineers' Meet for outdoor hand-launched glider, towline glider, and outdoor rubber. Frances Alexander, C.D., 25 Mull Ave., Akron.

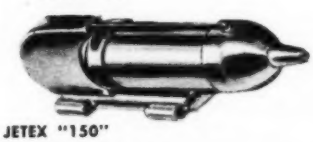
(Continued on page 48)

TO MODEL MODERN AIRCRAFT, YOU MUST HAVE MODERN POWER

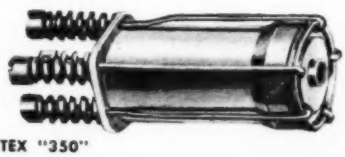


JETEX JET ENGINES

JETEX "50"



JETEX "150"



JETEX "350"

GIVE YOU THESE FEATURES

- TORQUE FREE THRUST OF TRUE REACTION MOTOR
- LIGHT WEIGHT, PRECISION MADE ALUMINUM PARTS
- LOW COST, SIMPLE, EFFICIENT DESIGN
- NO MOVING PARTS
- SAFE, CLEAN, SCIENTIFIC SOLID FUEL

SPECIFICATIONS	jetex jet engines		
model	50	150	350
ENGINE WEIGHT	2 OZ	7.5 OZ	25 OZ
FUEL WEIGHT (min)	2 OZ	2.7 OZ	4 OZ
TOTAL WEIGHT	4 OZ	1 00 OZ	2 9 OZ
① THRUST (max.)	6 OZ	1 75 OZ	4 0 OZ
DURATION — one charge	12 SEC	18 SEC	12 SEC
DURATION — two charges	—	—	24 SEC
DURATION three charges	—	—	③ 36 SEC
TORQUE	NONE	NONE	NONE
EXHAUST VELOCITY	1200 FS	1400 FS	1400 FS
OVERALL LENGTH	1 5/8"	3 1/2"	3 3/4"
MAXIMUM DIAMETER	11/16"	1"	1 3/8"
EFF WINGSPAN	12-20"	18-36"	32-54"
② ENGINE PRICE	$1 95	$4 95	$8 95
③ FUEL PRICE	$ 65	$ 95	$1 00

NOTE 1 THRUST OF "150" WITH AUGMENTER TUBE 2.25 OZ
NOTE 2 INCLUDES ENGINE, ACCESSORIES, MOUNTING CLIP INSTRUCTIONS, FUEL
NOTE 3 INCLUDES 10 FUEL CHARGES, IGNITERS, RETAINER SCREEN, SEALING WASHERS

See your Dealer or write: AMERICAN TELASCO Ltd., Huntington, N. Y.

:o the fuselage and takes their loads into the fuselage structure. The aft section of the fuselage bolts to this carry-through, so that the rear end can be removed for engine changes.

Fuselage is the familiar semi-monocoque structure. Fuselage nose and mid-section—the portion forward of the carry-through—contains the cockpit and the fuel cells. The nose inlet duct is split just inside the simple inlet. It carries back past the pilot and splits a second time to go over the wing spar carry-through structure. The ducts dump into a large plenum chamber which feeds the engine.

The horizontal tail of the *MiG* is similar in construction to the wing, except that a one-piece forged steel spar is the main structural element. The tail angle of incidence can only be varied on the ground.

The vertical fin, which must transmit horizontal tail loads into the fuselage, is a rugged member. It's two-spar, also, with the rear spar being the primary load-carrier. And parallel to this spar is a steel frame in the fuselage to take the loads in the spar.

That's about the substance of the article. There's a lot more detail on engine and equipment—and there are missing gaps of performance, weights and dimensions. It all goes to show that the Russians have built—along parallel lines to our own—a first-class fighter-interceptor. Their time table for development seems to be about the same as ours. The *MiG-15* is elderly by now, and is certainly going to be replaced shortly. Two years in combat is a long time for a fighter, and the Russians ought to be just about ready to graduate their student fighters to some hot aircraft.

When that happens, the curriculum of instruction over *MiG* alley is going to be a lot tougher for us.

▸ *Starfire*—Back to the US and our own fighter-interceptors. The country got a Fourth of July present—which we all helped pay for—from Lockheed in the new *Starfire F-94C*. She's more or less a new airplane, although retaining many of the features of the original *Shooting Star F-80* from which the Lockheed line has so successfully developed.

Most original feature of the *Starfire* is the armament. There aren't any guns, and at first glance, there isn't any armament. But look again. Behind the nose radome, there is an abrupt change in fuselage section. Four sliding doors cover openings at that sectional change. And inside those openings are 24 rockets — Mighty Mouse, 2-75-in. folding fin jobs — which are the battery and the reason for the plane's existence.

Lockheed says the *Starfire* is "nearly all-automatic." That means anything you care to read into it. But what you're after is this: On an intercept, an automatic airplane would takeoff, fly to intercept the target, lock on target, sight the guns and fire them without the necessity for the pilot to do anything but ride along.

Nearly all-automatic, I suppose, means that the early portion of the flight—to first intercept—is done by the pilot and his ground controller. From then on, Westinghouse's autopilot and a bunch of avionic aids should take over the job of flying and fighting.

The *Starfire* climbs more rapidly than any U. S. plane, said Hall Hibbard—I report by hearsay—on the power of its Pratt & Whitney *J48-P-5* turbojet. With afterburner operating, this powerplant pushes out almost 9,000 lbs. of thrust.

Starfire uses a tail chute for reducing landing runs. Her cabin is pressurized, has jettisonable canopy and ejection seats.

Takeoff weight of the *F-94C* exceeds 20,000 lbs. (And by a good margin, I'd say:) Length is 41 ft. 5 in., wingspan is 37 ft. 6 in. And as usual, the airplane is capable of speeds "over 600 mph." Operating altitude is in the neighborhood of 45,000 ft. which makes one wonder what if the boys come over at 50,000?

ACE Deluxe MIDGET RACER

a thrilling 10" model everyone's favorite

Really a "keen" number! Tops in realism and has everything — pressure pump, crash guard, instrument panel, springs, racing wheels, plastic steering wheel and many other features. With mostly ready-shaped parts, scale size plans and easy-to-follow instructions it's no trick at all for the experienced builder, but a bit of a challenge to the beginner. Buy a kit!

ACE Deluxe Midget Racer KIT No. 10R

AT ALL MODEL AND HOBBY SHOPS

KIT COMPLETE $1.50

DELUXE MIDGET RACER

F-51 Mustang
Kit S-2 Span 38"
Class A, B, and C $2.95

The Ring Master
Kit S-1, Span 42" $2.95
Class B&C

YAK-9
Kit S-3 Span 40" $2.95
Class A, B, and C

The Maverick
Kit D-1, Span 24" $1.00
Class ½A & A

IN THE AIR.... ON

17 Authentic REASONS WH

Completely Prefabricated • Highly Detailed A

The Monocoupe
Kit C-1, Span 36"
Class B&C
$4.95

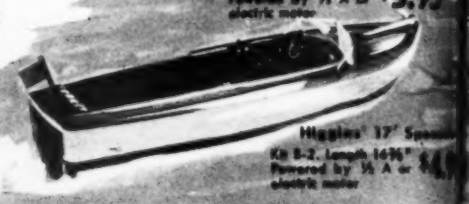
Howard Pete
Kit C-2, Span 30"
Class B, C&D
$5.95

Mr. Mulligan
Kit C-3, Span 32" $4.95
Class B&C

Ryan S-T
Kit C-7, Span 36" $5.95
Class B&C

SE 5
Kit C-6 Span 32" $5.95
Class B&C

Richardson 27' Cruiser
Kit B-1, Length 17" $5.95
Powered by ½ A or
electric motor



Higgins' 17' Speed
Kit B-2, Length 14½"
Powered by ½ A or
electric motor

RAILROAD PHOTO ALBUMS

The most unusual series of albums ever offered to collectors.

Here's your chance to own the same authentic railroad photos that are in some of America's most famous collections.

Compiled by Harry S. Albrecht, each of these albums consists of 22 clear, sharp pictures. And each is devoted entirely to a separate classification of locos.

For example, Album 1 pictures the 4-4-0 American Type, Album 2 the 2-8-0 Consolidation Type and Album 3 the 0-6-0 Type.

You'll want these three timeless albums—plus all the ones that will follow. Pick them up at your favorite hobby shop . . .

35c Each

Or send $4 for a 12 issue subscription

FOX-SHULMAN PUBLICATIONS, INC.
Dept. MA
30 East 29 Street
New York 16, N. Y.

The Jenny

(Continued from page 32)

commercial aviation. She flew the first regular airmail schedule and became the first readily available private plane. She continued to train hundreds of eager fledglings who were too young to join the Air Service during the war.

There is no pilot who has put in time on a *Jenny* in years past who will not admit: "Verily, there was an airplane." To those of us who teethed on a *Jenny* there is something magical in recalling the feel of air pressure on her elevators or rudder; of the throbbing of her *OX-5* engine pulling her out of a dirt field; of every rib, strut and wire vibrating in unison; of the fabric dancing to the same beat as she bored her way through the air.

The age of the *Jenny* was the age of flying "by the seat of your pants." To those born too late to become initiated first-hand to the habits and romance of the *Jenny,* these articles are dedicated in the hope that they will bring to life an era of the past; perhaps a glimpse and feel of flying as it was when the Curtiss *Jenny* was queen of the air.

To fully understand the importance of the Curtiss *Jenny* in American aviation annals of W. W. I., we must go back to the early days of flying in this country. One of our earliest and most successful pilots was a young engine builder and motorcycle racer named Glenn H. Curtiss. His gasoline engines were efficient enough to attract air-minded inventors such as Captain Baldwin. He built an engine for the Captain's "California Arrow" dirigible in 1904. Other aviation power plant assignments followed.

Curtiss' fame spread, and in 1907 he built a motor for the "Red Wing", produced by Alexander Graham Bell's "Aerial Experiment Association". This project actually got Curtiss interested in airplanes as well as engines. By 1908 he had designed and flown the Association's third machine, the "June Bug". In this crude pusher biplane, Curtiss won the Scientific American trophy offered for the first public flight of one kilometer, about five-eighths of a mile. The date was July 4, 1908.

The small factory where these early planes were designed and built was at Hammondsport, New York. This city and Curtiss were to become synonymous. Following a number of exhibition flights, including the New York-Albany flight of 152 miles to win the *New York's World's* $10,000 prize, Curtiss turned to the more serious business of building airplanes for sale.

The first thing Curtiss required, however, was a market for his airplanes, and he set about to create one. In aviation, this meant that customers who knew how to fly had to be created. Curtiss began by opening a flying school and giving instructions. In the summer of 1909, he taught C. F. Willard, and a Mr. Williams. Soon afterward, J. A. D. McCurdy, first pilot to send and receive a wireless message in an airplane, became a student. Charles K. Hamilton, Eugene B. Ely, Lincoln Beachey and T. J. Ellison followed. The Navy sent Lts. T. J. Ellyson and J. H. Towers to learn about this flying business. Many other airstruck youngsters came along to the Curtiss school and went on to write their names in American aviation history.

Curtiss pioneered the dual control system of instruction. Most instruction in those days consisted of the master shouting instructions to a pupil running around on the ground alone in a "grass cutter". But the young man from Hammondsport saw value in the master actually showing the student how to fly. His model "D" pusher biplane, of 1911 vintage and second plane supplied to the Signal Corps, was an open framework, dual control craft.

Up to that time, he had not attempted to cover the fuselage or any part of it, to improve streamlining and afford protection

THE SEA You PREFER— Authentic in Design

Sterling models

1530-34 N. Hancock St. Philadelphia 22, Pa.

Matchless Beauty—In Perfect Scale—and a Cinch to Build!

From coast to coast . . . wherever there are model enthusiasts . . . the name STERLING on any kit has always represented the finest materials, the very best workmanship and the greatest possible value. Year in and year out, Sterling Models are consistently superior in the field, due to the world's most modern scientific techniques devised over a half-century of combined model building experience. The blue ribbons you see pinned on these Sterling Models are unsolicited testimonials to their superiority from the leading editors in the field. Choose yours at your dealer's now!

STERLINE
The World's Finest Tubing!
Operating temperature without loss of qualities from -32 Deg. F. to 190 Deg. F.
Regular Size . . . . 25c ft.
Small Size . . . . . 20c ft.

STERL-X
The Perfect Economy Fuel Line!
Operating temperature without loss of qualities from -16 Deg. F. to 175 Deg. F.
Regular Size . . . . 15c ft.
Small Size . . . . . 10c ft.

against the wind. In the back of Glenn Curtiss' mind from the earliest days had been the idea of a flying boat. His model "F", in 1912, was such a craft, of necessity with an enclosed hull type fuselage. Returning to land-based craft, the Curtiss plane suddenly appeared with a tractor engine, a covered fuselage, bearing the model designation "J". Model "F" had pointed the way.

The "J", brought out in 1913, carried ailerons in the upper wing only, had a wheel-and-skid landing gear and a racy appearance for its time. Shortly thereafter model "N" came to light, very similar, with ailerons mounted between the wings, as in the model "D" pusher.

Combining the most desirable features of the two planes resulted in the model "JN". Modified, and with ailerons in both wings, it became the *JN-2*. *JN-3* followed quickly and finally, with further improvements, the first *Jenny*—model *JN-4* made its appearance.

Although the *JN-4* was developed as a standard training machine for use in the several Curtiss flying schools, by then established along the East Coast and in San Diego, California, the war in Europe soon put the *Jenny* in great demand as a military trainer. At the outbreak of W.W.I, a British purchasing commission arrived at Hammondsport, saw the *JN-4* demonstrated by the Curtiss pilots, looked over the blueprints, then sat down to talk business. That "business" was for about three-quarters of a million dollars worth of *Jennies*.

A month after Germany began her drive on France, *JN-4's* were coming off the line for the R.F.C. Other orders came in from Spain and other smaller countries. Domestic business increased as airminded young Americans paid for their own flight training in the hope of enlisting in foreign armies.

Curtiss had to expand his production facilities, set up a production unit at Buffalo. Curtiss engine building facilities also were enlarged. The *OX-5* series power plants were standard equipment for the *JN-4's*.

The *JN-4* supplied in 1915 was first of a long series of *Jenny* models. It was an uneven span biplane, 26' 10-1/2" long. The upper wing was 43' 7-3/8" tip to tip; lower was 33' 11-1/4". Chord of both was 59-1/2". Wings were braced by two bays of spruce struts and steel wires, which weighed, together with turnbuckles and other hardware, exactly 78 lbs.! Upper and lower wings, alone, weighed only 232 lbs.!

The 90 hp engine, cowled in sheet aluminum, was set at zero degrees thrust. An innovation of the time was the "car" type radiator located in the nose and equipped with a hole through which the propeller shaft projected. Tandem cockpits for pilot and passenger were located toward the rear of the lower wing, providing excellent visibility. The tail assembly consisted of unbalanced rudder and elevator, the latter with a trailing edge chord which narrowed toward the center, a small triangular vertical fin fixed above the fuselage and a rounded horizontal stabilizer.

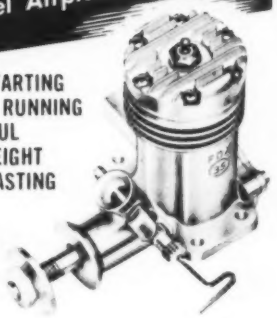
Landing gear on the *JN-4* also was something new in its day. It was a simple, two-wheeled affair with full axle, four legs or struts, and wire braced. Rubber shock cord provided springing action. The tail skid was externally sprung, hinged on a projection of the stern post several inches below the fuselage.

Although the basic *JN-4* was a good training craft, Curtiss continued its development, and in 1916 brought out the *JN-4A*. This Jenny differed from the basic *JN-4* in four particular respects.

First, dihedral was four deg. compared to one deg. in the *JN-4*. This change was made in order to give the *JN-4A* a little more stability and to improve its spin recovery. Second, ailerons were introduced into the lower wing which, combined with those in the upper, im-

(Continued on page 44)

FOX . . .
the WORLD'S FINEST Model Airplane Motors!



- EASY STARTING
- STEADY RUNNING
- POWERFUL
- LIGHTWEIGHT
- LONG LASTING

FOX 29
FOX 35

Fox powered more stunt winners last year than all other makes combined!

• • •

Flown by America's Outstanding Modelers —
BOB PALMER **HAROLD deBOLT**
LOU ANDREWS **HAROLD REINHARDT**
DON FERGUSON Jr. **GEORGE ALDRICH**
JIM SAFTIG

Ask the man who flies one!

ARNOLD & FOX ENGINEERING CO.
7401 Varna Ave., North Hollywood, Calif.

A B C OF MODELING
ALWAYS BUILD CLEVELAND
Old-Timers Can Tell You

For over 1-3 century we have been active in designing flying models of all types. With the know-how we have acquired in all this time, you could hardly expect to find better designs, better models or better materials. Take advantage of this know-how by buying only CLEVELAND'S — the most reliable name in the model industry!

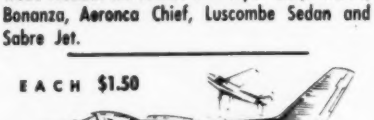
EACH $1.00

SIMPLEX – For simple prefabs. Nowhere can you find an easier to assemble or a nicer line of flying type scale models for quick assembly than these beautiful numbers of 15" to 27" span. Vought Corsair, Piper Cub, Lockheed F90, Banshee, Cutlass and Russian MIG.

EACH **59c**

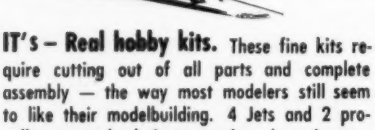
QUICKY'S For Plus Flying Fun. You'll find them being flown everywhere, not only by beginners, but by the older fellows and men too, who want to slap something together in a hurry — a "Quickie" if you please — just for a lot of fun in their own neighborhoods. All 18" span. Completely predecorated, prefabricated sheetwood models. Six numbers — Piper Cub, Silvaire, Bonanza, Aeronca Chief, Luscombe Sedan and Sabre Jet.

EACH $1.50



IT'S – Real hobby kits. These fine kits require cutting out of all parts and complete assembly — the way most modelers still seem to like their modelbuilding. 4 Jets and 2 propeller-powered designs ranging in wingspan from 24" to 30" of the built-up flying type — the same as all C-D's. Bell Airacobra, Warhawk, Shooting Star, Mustang, Panther and Sabre Jet.

1" SCALE



$6.95 $5.95

FOR THE SCALE CONTROLINER – 2 Standard numbers which are "hit" kits everywhere. The P-26A Fighter and Great Lakes Trainer.

NOTE: Minimum order $2.00 plus 35c packing and shipping charge.

CLEVELAND MODEL & SUPPLY CO.
4508K1 Lorain Ave., Cleveland 2, Ohio

proved lateral control. Third, the engine was installed at six deg. downthrust in an attempt to further improve handling characteristics. Fourth, was a redesign of the entire empennage to increase fin area, raise the rudder, simplify the horizontal surfaces by using straight leading and trailing edges. Another change was the enclosure of the tail skid springing mechanism within the fuselage.

Less apparent changes were an increase in lower wing span to 34' 8-1/2", and an increase in stagger to 16", as against 10-3/8", on the basic *JN-4*. Lower span was increased by giving that wing the same pointed trailing edge tip configuration as the upper wing. The basic *JN-4* lower tip was well rounded at the trailing edge. Empennage redesign resulted in a five inch increase in *JN-4A* over all length to 27' 3-1/2".

A word should be said about control systems on the early *Jennies*. From the start, Glenn Curtiss developed and used his own wheel and shoulder-yoke arrangement which became standard equipment on all Curtiss aircraft. The Curtiss system was designed to avoid infringing on other control patents. Over in Europe, the Deperdussin system was widely used, and in England a modified Deperdussin arrangement was used which replaced the lateral control wheel with the familiar "stick". Rudder control was by foot bar.

While *Jennies* were originally equipped with the Curtiss system, export models were fitted with a variety of combinations, depending on who was in which cockpit. Thus we find Curtiss-Deperdussin, Deperdussin-Curtiss, or double Deperdussin dual controls regularly installed. The instructor would have one set, his student another. It was only in later models that the conventional stick and rudder bar type of control was made standard.

In view of the many *Jenny* models produced, it is remarkable that the structure of the airplane remained generally constant throughout. Wings were made in right- and left-hand panels, the upper attached to a center section, the lower attached directly to fittings on the lower fuselage longerons. Front and rear wing spars were of solid spruce, milled to an "I" cross section, and connected by steel wire and heavied up compression ribs, in addition to regular airfoil ribs. The latter were made in front, center and rear plywood segments with cut-outs to lighten them, and tied together with birch cap strips. Leading edge was spruce and trailing edge was flattened steel tubing.

The fuselage consisted of four main longerons connected by struts and bracing wires. Longerons were 1-1/4" x 1-1/2" sectioned ash in the forward part, spliced to spruce members 1-1/2" square in the rear fuselage section.

Irish linen was used as the covering material, treated with five to seven coats of dope and one to three coats of varnish, depending on specifications. The engine section was covered by sheet aluminum cowls. Cockpit coamings also were sheet aluminum, padded around the cockpit cutouts. Top fuselage decking from the cockpits to the tail was built up of formers and stringers, cloth covered. It was attached by four hinges on each side, and by removing hinge pins from either side, could be swung open for interior inspection.

Although instrumentation varied on many *Jenny* models, standard instruments consisted of a tachometer, ball level, compass, oil gauge, gasoline gauge, and in addition: instrument board lights, fuel and ignition switches, a fire extinguisher and 17 lbs. of special rigging and assembly tools.

Empennage members were largely of wood construction with steel tube used for rudder and elevator hinge line spars, and for trailing edges.

Main landing gear of the *JN-4A* consisted of four spruce struts, which were bound at intervals with linen twine to prevent splitting. Arranged in right-and left-hand pairs, they were joined at the bottom by saddle fittings incorporating the axle guides. Tail skid was made of ash, metal shod, and sprung from shock cord within the fuselage. Wingtip skids, located underneath the outer wing strut fittings, were made of rattan and considered part of the landing equipment. Their fittings were formed of steel with built-in tie down rings.

Top speed of the *JN-4A* at sea level was officially quoted as 73 mph. Minimum speed was 43 mph—the slowest speed at which the ship could fly in level position and still maintain altitude. Stalling and landing speeds were about five mph below this figure. Climb was between 2,500 and 3,000 ft. in 10 min., depending on load and condition of the plane. Power loading of 21 lbs/hp and wing loading of about 5 lbs/sq/ft were rather precarious and accounted for Jennie's limited performance.

The *JN-4A*, however, incorporated design features that were to set a definite pattern for model variations to follow. The *Jenny* that American W.W.I student pilots and post-war barn-stormers knew so well, and its several variations, will be discussed next month.

Gyrator

(Continued from page 12)

pieces to the end to obtain the 40" long piece required.

Main spar material should be hard, square and absolutely straight. It will be necessary to splice about 4" to the end of each piece as was done on the trailing edge pieces.

Begin the wing assembly by joining the ribs to the upper and lower spars and then, before the cement hardens, add the lower half of the trailing edge and pin the assembly down flat on the workbench. A slow-drying cement is recommended for all wing construction. After allowing sufficient drying time, cement the upper half of the trailing edge in place and add the 1/4" sq. leading edge.

Sheet pine 1/8", or basswood 1/8", is recommended for the landing gear stiffener, although plywood may be used provided if it is warp-free. Notch for the ribs and drill holes as shown to mount the landing gear. Before installing this stiffener, cut the required number of main spar webs from 1/16" sheet balsa and cement them to the front of the upper and lower main spars. Allow the cement to harden and then cement the stiffener to the front of the webs. Cut three strips of 1" wide silk or nylon and wrap them tightly around the gear stiffener and mainspars and coat liberally with cement.

Bend two landing gear halves from 1/8" steel music wire and sew each one to rib W-2 on the right and left wing halves, using soft copper wire. A carefully executed job at this point will insure an accurate and strong landing gear.

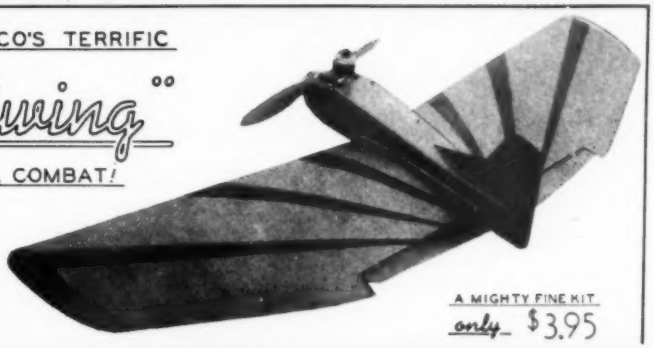
Select four straight pieces of 1/8" x 3/8" hard balsa strip for the anti-warp spars. Lay them on the wing assembly at the location shown on the drawings and mark the positions on top of each rib with a soft pencil. Now, notch each rib in turn, using a razor blade and sharp knife to a depth of 3/8". The spars should fit smoothly in the notches and may be cemented in place.

Again using slow-drying cement, assemble the soft 1/16" sheet to the lower half of the leading edge, starting from the spar and working forward. Cement the lower sheet covering to the wing center section and then add the bellcrank mount and bellcrank, locating them as shown on the drawings.

At this point, it's advisable to thread the .016 dia. flexible lead-out wires from the bellcrank through the ribs and tape the ends together at the left wingtip. Bend the pushrod from 1/16" wire and insert through the outside hole in the bellcrank, before adding the 1/16" sheet balsa to the top leading edge and

DMECO MODELS
"AMERICA'S FINEST"

DMECO'S TERRIFIC
"Sportwing"
FOR STUNT & COMBAT!



LOOK THIS MODEL OVER!

Modelers, here is a model that stands out above all others. it's new and it's different in design as well as in its "jig construction." Superior performance for both stunt and combat flying is assured.

Specifications:
Wing Span: 36"
Wing Area: 250 Sq. in.
Design weight: 14 oz.
Power: .19 to .29 engines
Fully stuntable!

Complete kit:
- Finest Grade A-1 materials!
- Full Size detailed plans!
- Decals & Covering materials!
- All parts machined to exact shape, ready to assemble!
- Jig built wing for simplicity and accuracy!

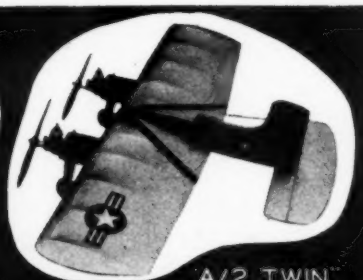
Design Engineered, fully tested and Proven!

A MIGHTY FINE KIT
only $3.95

THE TRIED & PROVEN
"all American Team"
WITH ASSYMETRICAL STABILITY

1. THE TRAINER .04-09 ENGINES $1.75
A FINE BASIC TRAINER FOR LEARNING
2. THE JUNIOR .06-09 ENGINES $2.50
STUNT TRAINING BECOMES SIMPLE
3. THE ALL AMERICAN .19-29 ENG $4.95
A THOROUGHBRED STUNT MODEL
4. THE SENIOR .29-49 ENGINES $5.95
THE STAR OF THEM ALL, FULL STUNT

MOST DMECO MODELS HAVE DURAL GEARS!



A/2 TWIN
FOR SIMPLIFIED TWIN ENGINE FLYING $2.95

OTHER FINE DMECO KITS
NEW BIPE STUNT TRAINER $3.95
SPORTWING COMBAT FLYER $3.95
STUNTWAGONS CONTEST STUNT
SPEEDWAGONS ALL SPEED CLASSES

All of these fine dmeco kits are pre-fabbed from the world's best materials to the most exacting tolerances. Complete with GIANT full size plans, instructions, covering materials and all special hardware to make a truly fine model. Fully unconditionally guaranteed against defects in materials and workmanship.

"LIVE WIRE"
R/C TRAINER
A QUICKLY BUILT MODEL FOR R/C TRAINING. RUGGED & MANEUVERABLE, YET EASY TO FLY!
COMPLETE DELUXE KIT $6.95

READY TO ASSEMBLE
"SPEEDSTER"
HERE IS REAL FUN WITH 1/2A TEAM RACING!
$2.50

PRODUCTS OF THE
DE BOLT MODEL ENGINEERING CO.
WILLIAMSVILLE, N.Y.

center panel. Rectangles cut from 1/16" soft sheet are accurately cemented between the upper and lower halves of the trailing edge and between the ribs, as shown on the drawings. This job requires a little extra time, but the strength gained is well worth the effort.

To add much needed strength at the middle of the wing, we cut a large piece of nylon and covered the sheet balsa center panel, wrapping the nylon around the leading and trailing edges and, most important, bringing it down around the sides of the two center ribs, and doping the covering thoroughly. This step is very important and must not be omitted, since the strength of the bellcrank mount depends on it! If nylon is not available, use silk or even a piece of your shirt tail.

Cap strips, 1/16" x 1/4", can be sliced from 1/16" soft sheet and cemented over the center of each rib as required.

Cut the tips roughly to shape from soft balsa blocks of an appropriate size and cement lightly to each wingtip. Finish carve them and, at the same time, sand the entire wing structure to a smooth finish. Remove the tips and hollow the left tip only to the thickness shown. Add the 1/8" O.D. aluminum lead-out tubes to the left tip only and cement this tip in place. The right tip is left solid except for a 1/4" hole to place about one oz. of lead in for lateral balance. The hole should be plugged with filler and the tip cemented in place permanently. Sand the entire wing assembly again; remove all rough spots and fill all cracks. Check the entire wing structure for weak joints and re-cement if necessary. The wing framework should be given at least one coat of thinned dope and another light sanding before covering.

Silk or nylon, because of their strength and toughness, are the best covering materials but heavy *Silkspan* is satisfactory. Regardless of which is used, do a neat job. Four coats of clear dope should be brushed on the wing and it is completed.

Cut two sides from 1/8" medium hard sheet balsa. Place the sides together and sand the edges until they are identical. Now make two fuselage doublers from 1/16" plywood and cement them to the fuselage sides as shown. Engine mounts are made from 1/4" x 3/8" hardwood and should be shaped as shown on the top view. The mounts are fastened to the sides with a good casein glue and several No. 2 x 1/2" long flat head brass wood screws.

Notch the sides for the wing as shown on the drawings. Cut out all the formers as required. Former No. 1 only is made of 1/8" plywood, all the rest from 1/8" sheet balsa. Locate former No. 2 and No. 5 on the sides and cement them in place. After drying, lay the wing in place in the notch provided and liberally cement in place. Add the lower portions of the sides that were cut out for the wing. The balance of the formers should be added and the fuselage trued-up.

The rounded portion of the fuselage is planked with 1/8" x 3/8" soft balsa strip from former No. 2 to No. 7. Don't let planking scare you! It's the easiest job in the world. Just bevel the edges of each strip and working equally upward from the sides, cement them to one another, gradually tapering them in toward the center. Always use a slow-drying cement for this job.

Now, locate the engine and drill holes in the mounts for No. 4-40 machine screws. Solder the hex nuts to a piece of sheet brass and cement the assembly to the underside of each mount in line with the holes. The cowl and chin piece are carved from soft balsa blocks and the chin piece only is cemented in place after adding the 3/32" sheet balsa bottom. The fuselage tail block is spot cemented in place and roughly carved from soft sheet balsa.

(Continued on page 46)

WYLAM
MASTERPLANS

BOOKS II & III OFFERED IN COMBINATON FOR ONLY $3

These two treasured volumes are packed with super-detailed drawings to guide you in constructing "real jewels" in miniature aircraft. Years of patient research were spent before these drawings were possible.

CONTENTS

BOOK II
Wright Bros. Orig. Flyer
Boeing B-29 Superfort
Bell P-59A Airacomet
Northrop A-17A
Lycoming R-680 Engine
Northrop Black Widow
Martin A-22 Maryland
Republic Thunderbolt
Martin B-26D Marauder
Vought Vindicator
Avro Lancaster I
Air Bombs
Consol. B-24H Liberator
Boeing B-17G Fly. Fort
Fokker G-1
N. Amer. P-51B Mustang
World War I S.E.-5
Mitsubishi OB-01 Betty
Consolidated Catalina
Curtiss P-40 Warhawk
Grumman F6F-3 Hellcat
Curtiss A-25 Helldiver

BOOK III
Albatross D-1 to D-6
Bell P-63A King-cobra
Boeing C-97 Strato.
Bristol F2B Brisfit
De Havilland DeH-4
Douglas A-26 Invader
Douglas C-54 Skymaster
Hispano-Suiza Engines
Lewis .30 AA Mach. Gun
McDonnell XP-67
Piper PA-8 Skycycle
S.E.-5 Color Scheme Details
S.E.-5 R.A.F. Markings
Seimens-Haske Engine
Seimens-Schukert D-4
Spad S-VII
Spad S-XIA-2
Spad S-XIII C.1
Vickers .30 and 11 mm Machine Guns
Vultee XP-54

AIR AGE, INC.
551 FIFTH AVE., New York 17, N. Y.

Enclosed find $.....Send me:
( ) Combo. Offer Books II & III.....$3.00
( ) Book II $1.50
( ) Book III $2.00

NAME .....
ADDRESS .....
CITY..... STATE.....

The World's Greatest
Hobbycraft Show
in **National's New Check List**
Now . . . 92 Pages . . . With More Than 10,000 Items at Your Finger Tips

* On Your Letterhead Please.

NEW HOBBYCRAFT CHECK LIST
TOY AND TRAIN CATALOG
RAILROAD PARTS CATALOG
ENGINE PARTS CATALOG

National MODEL DISTRIBUTORS
2516 NORTH GREENVIEW AVENUE CHICAGO 14, ILLINOIS

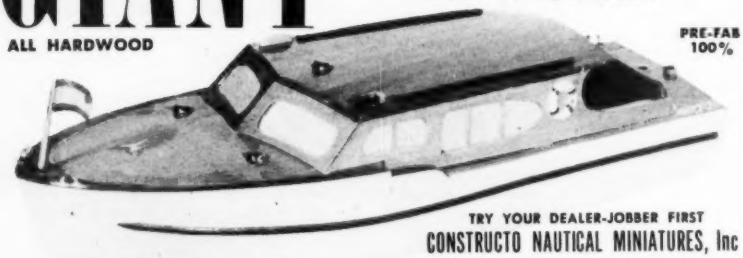
GIANT

24" CABIN CRUISER 12.50

A rugged, sea-worthy giant. Fully carved bow! (No flimsy die-cutting, no balsa-wood!) Operates with gas, electric, spring motor! All parts finished and numbered, ready-to-assemble! FINISHED "READY-TO-RUN" with ELEC. MOTOR. Complete, including stand, $25.00.

ALL HARDWOOD

PRE-FAB 100%



TRY YOUR DEALER-JOBBER FIRST
CONSTRUCTO NAUTICAL MINIATURES, Inc
1186 Broadway (MA-1) New York 1

ADD THE "SPIRIT OF THE WEST" To Your Collection

Ideal "Easy-to-Assemble" AUTHENTIC KITS

PIONEER TRAIL

COMPLETELY PREFABRICATED WITH METAL, PLASTIC AND DIE CUT PARTS

$1.50 EACH

- No. 501 STAGE COACH
- No. 502 BUCKBOARD
- No. 503 COVERED WAGON

SEE YOUR DEALER TODAY!

IDEAL MODELS
20-24 WEST 19th ST., NEW YORK 11, N. Y.

StromBecKer Solid Model Kit

F86 SABRE JET FIGHTER

Wingspan, 4¼"
Fuselage, 8½"

Realistic model for desk or shelf. Scale 1/6" to 1'. Parts ready-shaped. Complete with full-color decals, plastic canopy, display stand. At your hobby dealer, 69¢

Send for free circular describing all models.

Strombeck-Becker Mfg. Co., Dept. MN-10, Moline, Illinois

MODEL BOAT CONSTRUCTION

EDITED BY — Harvey A. Adams, Naval Architect, this NEW, LARGE 12" x 9½" heavy CLOTH BOUND volume contains every interesting detail on Power Boat Building. Score upon score of expertly written pages. Plans are included, which open out to DOUBLE PAGE SIZE, for RADIO CONTROLLED 47" Fairlie Bluff motor cruiser, the 51" Triton II cruiser for TWIN engines and Radio Control P.T. Boat for Radio. Additional plans are given for Jetcraft, 16" Sharpie, 18" Dinghy, 20" Racing Hydroplane, 30" Cabin Cruiser, British Torpedo Boat, etc. Complete details are shown for boat propeller design, automatic steering devices, self centering radio control, engine cooling methods, airscoops, special painting and hull construction methods. You can start at once with complete confidence to build any boat in this book, Radio Controlled or otherwise, every last minute detail is shown and explained to you in a simple and interesting manner.

SPECIAL INTRODUCTORY PRICE $11.95 postpaid

OTHER WORLD FAMOUS BOAT BOOKS BY FAMOUS AUTHORS BELOW

"Build Yourself a Model Yacht" $3.98.
"Model Sailing Yachts" $3.50.

Above two books are a complete set by Daniels and Tucker, holders of many WORLD'S RECORDS for model sailing craft.

"Paddle Steamers" $2.98 "Ships in Bottles" $1.50
"Ship Modellers Logbook" $3.98
"Ship Model Hints Tips" $3.50

GULL MODEL AIRPLANE COMPANY
10 EAST OVERLEA AVE., DEPT. M-5
BALTIMORE 6, MARYLAND

Containing **RADIO CONTROLLED BOATS...**

CONTAINS 13 CHAPTERS
OVER 200 PHOTOS and SKETCHES
SPECIAL INTRODUCTORY PRICE
$11.95 p.p.

Make the stabilizer and rudder of 3/16" sheet balsa. Elevators are hinged to the stab with aircraft fabric or muslin. Build the control horn and sew to the elevator as shown using strong thread, and coat with cement. Sand the rudder and fin to shape and add rudder offset as shown on the drawings.

Now, cement the rudder and stab assemblies to the fuselage and add the fuselage tail block pieces and sand the entire assembly thoroughly. Although it isn't absolutely necessary, we recommend covering the fuselage with silk, nylon or *Silkspan*. It makes a world of difference in the life of a model and also simplifies the finishing problem. Assuming that you have done a really terrific sanding job, we suggest two or three coats of clear dope and a little more sanding to finish the hard work.

Final assembly consists of the construction and installation of a tank and hooking-up the controls. The choice of a tank is, as we said before, a matter of individual choice but we can recommend the one shown on the drawings.

The controls should work freely with approximately 45 degrees up and down movement. Check the balance at this stage and, if the model does not balance at the point indicated, add ballast where required until it does.

Wheel fairings may be fabricated from sheet aluminum 1/64" thick. To fasten them to the landing gear wire, we drilled four holes as shown on the drawings and laced them to the gear with heavy copper wire. Coating these joints with soft solder afterward made them practically unnoticeable. Slip the wheels in place and solder retainer washers to the gear. Check for free-running and remove all traces of flux.

Since stunt ships in today's contests are judged for appearance as well as performance, a good finish is an absolute "must". Three or four coats of sanding sealer with a light sanding between coats will provide a good base for the final color.

The original model was given six coats of thinned red dope all over. The inside of the cockpit was doped black and the canopy trimmed to fit and cemented in place after the second coat of red dope.

Canopy frames were simulated with strips of Mystic tape stuck to the canopy as shown in the photos. All trimming was done with Hobby Decal Trim Film and Checkerboard, using white and black stripes and black checkers on the red background. Some of Hobby Decal's new line of model airplane decal designs were used to spruce the crate up and the effect is very pleasing. Unless you used a hot fuel proof dope, give the entire ship a couple of good coats of H.F.P., paying particular attention to the inside of the cowl around the engine and the edges of the decals if used.

The Aeronut

(Continued from page 16)

Although no downthrust is shown, place washers underneath lugs of rear screws. Washers are .020 thick (more about this in testing and flying section). Wheels are two inches in diameter: Sand fuselage and cover. Original was covered with silk. *Silkspan* or *Skysail* may be used too.

This wing has Davis No. 5 airfoil, cap stripped and sheeted top. You will notice the wing has a notch in the center. Use the following procedure and you will find it easy to build. Build the wing conventionally. Ignore temporarily the notch and build the leading edge straight through butting together in the center. Remember, however, to make the center rib with a flat bottom. Drawing a straight line form the front of the bottommost part of camber to the trailing edge. This will also help line up the wing saddle later on. After wing is dry, cut

away leading edge for the notch. Cut and shape with 1/2" sheet notched according to plan. Re-enforce notch with 1/4" sq. to the main spar. Sheet leading edge to first small spar and cap strip from there on. Get the shape of the wing saddle from the wing rest. The wing saddle is then built temporarily on the wing rest of the fuselage. Put waxpaper in between. When dry, remove and cement to the bottom of the center section of the wing. Fair in saddle. Sand thoroughly and cover wing. Try to avoid warps.

Tail is almost self explanatory. Sand carefully airfoil shape into tail. Note two center ribs between which the rudder will be sandwiched. This is made of 1/8" x 1/2" sheet. Be certain to include these two necessary ribs. Cover tail. Build rudder. Sand and cover. Cut away for tab. Use .010 sheet aluminum or brass for hinges. Sandwich rudder between the two center ribs of the tail. True up rudder. Make it perpendicular to tail. Use your favorite type of dethermalizer. I used the pop-up tail type. Assemble wing, tail and fuselage. Check to see everything is aligned right.

You now have a ship that, if tested and flown correctly, will not only give you enjoyable hours but also will help you take home that valuable hardware. Glide very carefully. Ship should have a very flat glide with its nose in a slightly down position. Towards the end of the test glides the ship should slightly turn left. After the model is gliding satisfactory, take a power flight. Get the engine to rev slowly, (as slow as possible with glow plug). The model has a natural climb to the right and should climb that way. When motor cuts it should glide left; if it doesn't, trim tab to make it do so. After slow power flights gradually increase power until full power flights have satisfactorily been obtained. Downthrust should only be applied if there is too much hanging on the prop tendency. With the *Torpedo 19* only .020 washers were needed, about 1-1/2 degrees down, with a Forster *29* between three and six degrees, depending on power. You will be amazed at the soaring qualities of the ship. This is where the streamlining pays off. Be sure to use a dethermalizer every flight. On first test flights the author lost the ship at six o'clock in the evening because he thought there were no thermals about. Fortunately the model was subsequently returned to the owner.

Dimensions of other displacements. .035-.049: chord 5 in., span 32 in., length 23 in., tail 37 percent, rudder 8 percent, wing area, 150 sq. in.; .065-.09: chord 6 in., span 42 in., length 29 in., tail 37 percent, rudder 8 percent, wing area 220 sq. in. (Editor's Note—As we go to press word is received that the ship in this article took first place at annual big Plymouth Meet, Johnsville, Naval Air Station, Pa.)

handy-reel

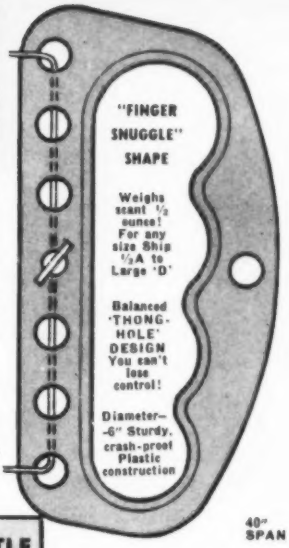
APPROVED BY A.M.A. CONTEST DIRECTORS

'handy-reel' is new, safe practical '2-way' control handle and reel! Light enough to 'feel' smallest ½A yet rugged and strong for heaviest air-giant! WITHSANDS PULL IN EXCESS OF 100 lbs! Detachable handle fits into reel—for winding & storing line! Same easy, precision control for right or left hand use!

TOP-SPEED AT MIRROR MEET 145.27 M.P.H.

'Charley' Winters—with HANDY-REEL—thrilled thousands at MIRROR MEET with speed and precision flying demonstration! EASY TO LEARN WITH, EASY TO WORK WITH; EASY TO WIN WITH!

$2.95


"FINGER SNUGGLE" SHAPE
Weighs scant ½ ounce! For any size Ship ½A to Large 'D'
Balanced 'THONG-HOLE' DESIGN You can't lose control!
Diameter—6" Sturdy, crash-proof Plastic construction

40" SPAN

24" FUSE

ALIGNS ITSELF AS YOU BUILD

'ALL PRE-FAB'

435 sq. in. STUNT MODEL $5.95

½A FLYING SCALE MODEL

$2.95 EA.

18" SPAN

Redi-Carved & HOLLOWED FUSELAGE

P-51, Vo. Corsair, F. W. 190 TYPHOON, ZERO, SPITFIRE

NEW! SQUEEZE BOTTLE FUEL TOTER

handy-boy

UNBREAKABLE PLASTIC

NOW! A cinch to fill tank instantly — and NO waste! Fine nozzle — just squeeze! Handy attached cap! Holds 4oz.!

$1.25

NEW ANTI-FOAMING

hell razor FUEL

A blend of the finest chemicals with synthetic oil — for championship performance! Helps lubricate!

$1.25

Dealers—Jobbers! Write for full particulars!

For 19, 29 or 35 cu. in. displ. motors. Die-cut sides, top, bottom, plywood formers, flaps, wing ribs; shaped rudder, stab., elevator, cockpit.

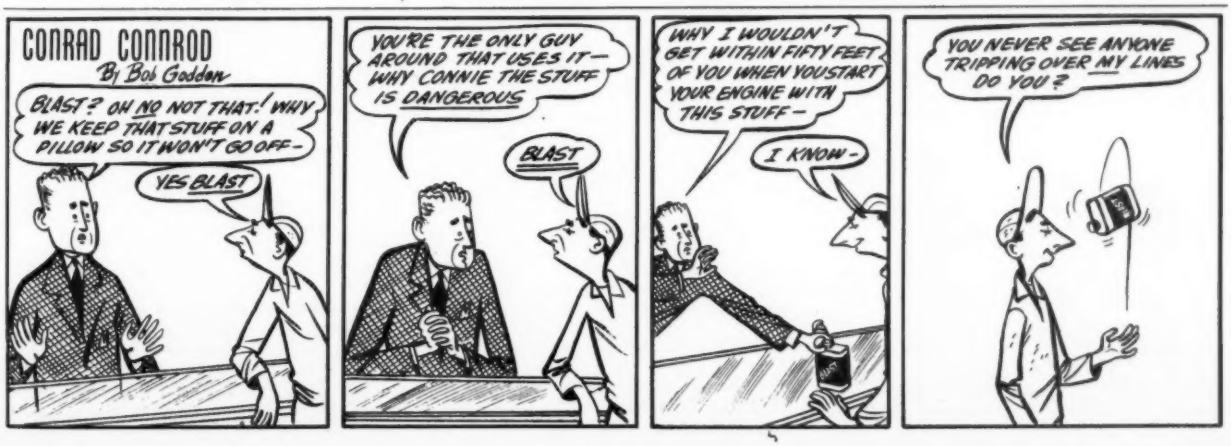
159.23 m.p.h.
'A' — 5.95
'B' — 6.50
'C' — 'D' — 6.95
'½A' — 2.00

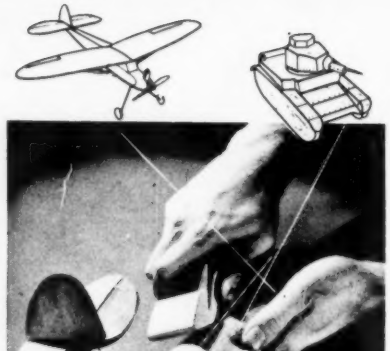
Precision-scaled, precision-produced in the CONSOLIDATED manner which means finest-kit-of-its-kind! Redi-carved & hollowed fuselage; super-detailed 'cinch-to-follow' plan; cut-to-shape Wings, Stabs & Rubber plus All hardware! Value plus!

MAIL ORDERS FILLED (No C.O.D.)

ConSOLIDated

3087 3rd Ave. (MA 1052), New York 56, N. Y.


CONRAD CONROD
By Bob Geddon
BLAST? OH NO NOT THAT! WHY WE KEEP THAT STUFF ON A PILLOW SO IT WON'T GO OFF-
YES BLAST
YOU'RE THE ONLY GUY AROUND THAT USES IT— WHY CONNIE THE STUFF IS DANGEROUS
BLAST
WHY I WOULDN'T GET WITHIN FIFTY FEET OF YOU WHEN YOU START YOUR ENGINE WITH THIS STUFF-
I KNOW-
YOU NEVER SEE ANYONE TRIPPING OVER MY LINES DO YOU?



make your *HANDS MORE CREATIVE* with x-acto Knives and Tools

X-acto precision knives and tools give untrained hands the confidence that makes them creative.

X-acto originates attractive handicraft projects . . . goals easily accomplished. The finished product gives you the pride of achievement that comes only with doing something well with your hands.

For their hobbies . . . boat whittling, model airplanes, woodcarving, leathercraft, model railroads or any other handicraft . . . master craftsmen and hobbyists select "designed-for-the-job" X-acto knives, tools and handicraft kits. X-acto offers the complete line of handicraft knives, interchangeable blades, tools and attractive kits.

From 25¢ to $30.—at dealers everywhere

No. 86—X-ACTO HOBBY CHEST— $12.00

Send 15c to cover postage for our new illustrated 28-page Catalog.

x-acto ®

X-acto Crescent Products Co., Inc.
440 Fourth Avenue, New York 16, New York

AMA

(Continued from page 40)

14—*Perth Amboy, N. J.* Class AAA First Annual Flying Olympics for control line stunt, speed, beauty, and combat. Martin J. R. Maciag, C.D., 433 Douglas Ave., Avenel, N. J.

14—*Harrisburg, Pa.*—Class AA Central Pennsylvania Model Airplane Meet. J. Clarence Bachman, C.D., 2121 Derry St., Harrisburg.

14—*Kansas City, Mo.* Class AA K.C.•MO-Hawks' 1/2-A Scale Free Flight Contest. S. E. Smith, C.D., 228 E. 32nd Terrace, Kansas City.

14—*Milwaukee, Wisc.* Class AA Milwaukee Model Plane Show for outdoor hand-launched glider, towline glider, free flight gas, radio control, control line speed, stunt, and combat. C. T. O'Harrow, C.D., 2478 N. 72 St., Milwaukee 10.

14—*Springfield, O.* Class AA 5th Annual Strato-Hawk Model Meet for free flight gas and radio control. Charles Greetham, C.D., 115 E. Cecil, Springfield.

14—*Bakersfield, Calif.* Bakersfield Record Trials for free flight gas. Clinton Merrill, C.D., 212 Washington, Oildale, Calif.

21—*Grove City, Pa.* Class AAA Pennsylvania State Exchange Clubs' 8th Annual Meet for free flight gas, control line speed, outdoor rubber, glider, radio control, and scale-beauty. J. F. Moore, C.D., Cochranton, Pa. Pending.

28—*Hicksville, L. I., N. Y.* Class AA 6th Annual Screamin' Demons of Long Island Meet (part two) for free flight gas and towline glider. Bob Burgas, C.D., 255 Laurel Ave., Arlington, N. J.

OCTOBER

12—*San Bernardino, Calif.* San Bernardino Flying Wheels' 3rd Annual Free Flight Gas Model Contest. For information, write to: Taylor E. Huston, 1467 Barton St., San Bernardino. Pending.

12—*Bakersfield, Calif.* Bakersfield Record Trials for free flight gas. Francis Stewart, C.D., 900-21, Bakersfield.

NOVEMBER

9—*Bakersfield, Calif.* Bakersfield Record Trials for free flight gas. Clinton Merrill, C.D., 212 Washington, Oildale, Calif.

DECEMBER

14—*Bakersfield, Calif.* Bakersfield Record Trials for free flight gas. Francis Stewart, C.D., 900-21, Bakersfield.

Contests designated "pending" mean the application is before the proper authorities as we go to press; "Record Trials" mean no prizes, but a chance at cracking the records; "Class A" is a meet with restricted entry; "Class AA" is a meet with unrestricted entry; "Class AAA" is a state-wide or regional meet; "Class AAAA" is a national or international meet.

We Test

(Continued from page 23)

on the streamers out of the way of the elevator.

Shape the body per the cross section in the plans, not where the wing fastens on. This adds to the appearance of the ship. The nose is easier to shape before the landing gear is permanently cemented and fastened at the bottom. There is plenty of room for individuality in the shaping of these ships, if you so desire. You can obtain a picture of a *Mustang* or *Yak* and make a scale outline as follows: block out around the nose, fair into the spinner, outline and taper the blocks back to a point just aft of the leading edge of the wing. If you use about 1/2" stock for the wing fairings, they can be sanded to appear as part of the leading edge. A drop-off landing gear would add to maneuverability.

Combat rules are still in the formative stage according to Russ Nichols, none having been adopted as yet by AMA. He referred us to the rules adopted by the Mirror Meet and the International Plymouth Meet in Detroit. Although these rules will probably require some changes, they form a good basis for combat.

AMA regulations regarding pull tests and safety apply. Both meets grouped all engine classifications together. The Mirror .035 to .37 and Plymouth .000 to .49. No jets. Lines .014 (.020 for single line) 60 feet long. Lines must be of accurate length as the planes must line up when attacking or maneuvering.

Any plane meeting the safety requirements and capable of attack and evasive maneuvers is eligible. No points for appearance or scale. Streamers of crepe paper eight feet long are attached to the rear of the model with two feet of string extending past the rear point of the ship.

The scoring is five points for each attack and three points for each successful evasion of an attack. A bonus of 25 points for each attack in which an opponent's streamer is cleanly cut. 100 additional bonus points for cutting an opponent's string leader so that no part of the streamer is attached. This is a "kill" and no additional points awarded. A judge should signal a kill and no further attacks should be made by either contestant. In the event of a mid-air collision, no score for the pilot at fault. Points for cutting opponent's streamer are:

7-8 ft. 350 points, 6-7 ft. 345, 5-6 ft. 335, 4-5 ft. 320, 3-4 ft. 295, 2-3 ft. 255, 1-2 ft. 195, 0-1 ft. 110.

Flights are five minutes from the time the first plane is airborne. If the second ship does not get into the air there is no score. Model must be flown over six feet for level flight (not under eight feet for more than one half a lap per Plymouth). If a streamer falls off within one minute of start and no "kill" has been scored, both scores are void. Refueling and restarting are permissible within the five minute period.

Now, it's up to you. If you've never flown with someone else in the circle, take it easy at first but you'll soon find it's as easy as flying alone and you'll really get a kick out of combat flying.

MR. DEALER—
Prepare your stock NOW for Holiday selling!
MOD-KRAFF LINES
WRITE FOR YOUR CATALOG. REPLIES WILL BE MADE TO INQUIRIES ON OFFICIAL STATIONERY ONLY.
MOD KRAFF CO
840 Union St., New Orleans 12, La.

Scrap Box

(Continued from page 4)

eight. If the model could be in a vertical position following the drawing, it's a new one on us—tsk, tsk.

Notice that the flyers are going into the horizontal eights in reverse. This allows the ship to climb through the cross-over point instead of diving as it does in the conventional method. Believe us fellows, it's much simpler this way.

Ken Aymar suggested the use of the special maneuvers again. Sure, this would help, but it isn't enough. Let's have two or even three patterns to fly. Number one, the present one would be OK here. Number two, things get a bit tougher. Take off into a wing-over, follow up with a three-leaf clover, pair of spectacles, an outside square loop, etc. Third pattern, a beauty. Take off into a vertical eight, then a four-leaf clover, a square vertical eight, and so on. These are just a few suggestions. As Bob Swenson says, "It sure would separate the men from the boys." We can hear the chiming from the balcony, fellows. Some nays and plenty of ayes. For a cross section comparison, compare the stunt circles today with the combat circles. Where are the most spectators? Let's hear from you on the question.

While on the subject of stunt, Bob Swenson (Asst. U-Control Contest Director at the Nat's), Jerry T. R. Gaston, and Fred Nuslein have built a stunt job to end all stunt jobs. We hope to have a shot of it when the final touch-ups have been made. Check this: Power — four Anderson Spitfires (the big ones), 2140 square in. of wing area, retractable gear, engine controls, and Lord knows what else. This giant will be flown on 100 ft. lines and should tip the scales, ready to fly, at approximately ten pounds. The builders all agree that it will go through the pattern. If it doesn't, the Santa Ana Hobby Shop sure donated a lot of wood and glue for the honor of contributing to the biggest darned crash since the *Macon*.

* * *

Caught a report of the Greater Southeastern Model Airplane Championships held at Fulton County Airport, Atlanta, Georgia. Modelers from Ohio, Arkansas, Louisiana, Tennessee, North and South Carolina, Georgia, Alabama, and Florida checked in. Conflict in dates with the World Air Force Meet and the Capitol Air Show in Washington kinda fouled up the entry list. The Air Force meet alone knocked out at least 75 contestants who would have competed in the Southeastern. Seems during December of 1951 the Southeastern dates were fixed per request of Lt. Vogler of the Air Force, then top brass in the Air Force set up a conflicting schedule without deference to the South's biggest meet. Looks from here as if A.M.A. fumbled the ball. Let's knock the conflicting dates off the schedules. Executive Director of the meet, R. H. Elliott, got the ball rolling in a slick way. Officials of the meet were rounded up at 6:30 a.m. for an "Officials" breakfast, gratis. Introductions and last minute briefing, together with a southern cooked breakfast all were expedited in 45 minutes. Amateur Moviemakers Club of Atlanta arranged a good deal. The gang shot enough footage of color 16mm film to make about a fifteen minute movie of the meet. Film exchanges contributed the film and magazines. The film when cut etc., will be available via the rental route to offset cost of additional prints. Tommy Davis of Atlanta, Ga., walked off with the Arthur Godfrey Perpetual Trophy, Lamar Parker won the Eddie Rickenbacker Trophy for Best Sportsmanship, and Evelyn Milligan took the award for the best girl flier. Open High Point — William C. Yarbrough; Sr. High Point—Don N. Murray.

* * *

South Brisbane, Australia — Arthur Gorrie let us in on a bit of news from Queensland. The parent body MAA of Queensland has just completed a busy cycle of important events. Staged a static and competitive display at the recent Queensland Industries Fair. Stirred up plenty of interest. Results, the gang will be flying on several nights throughout the coming Royal National Show for 1952. Thirty-thousand spectators are expected. Things should really pop after the demonstrations. Sharp arrangement here; Team Racing and Combat Flying will be featured. These are the crowd pleasers. Get this! The combat events will feature three and four contestants in the circle at a time. Wonder how long the mass mayhem goes on before the four-way "clobber" happens. Whatta crowd pleaser this event will be! Arthur's "scoop" on the '52 State Championships intrigued us. Free flight events held at Amberley Air Force Station. Over 150 contestants took to the air for a selection of slick prizes. The day was used as a charity appeal for Legacy, an association which cares for war widows and their dependents. Over 50 pounds went into the fund on sale of pies, drinks, etc. The "eager beavers" are preparing for the sixth Australian Nationals to be held in Victoria, about 1000 miles away.

* * *

South Brighton, South Australia — Boyd Felstead of South Brighton, current holder of the Australian indoor fuselage record, class B, of 12-1/2 minutes, established at the 1951 Australian Nationals. Jasco balsa and Cummings microfilm were used and the model weighed .028 oz. Felstead is secretary of the *South Australian Associated Aeromodellers* and is a bit gone on the "skeleton" jobs. Would like to see the scrapbook from way back that he has. Seems it has been going on since Carl Goldberg flew 22.59 at Akron in 1934.

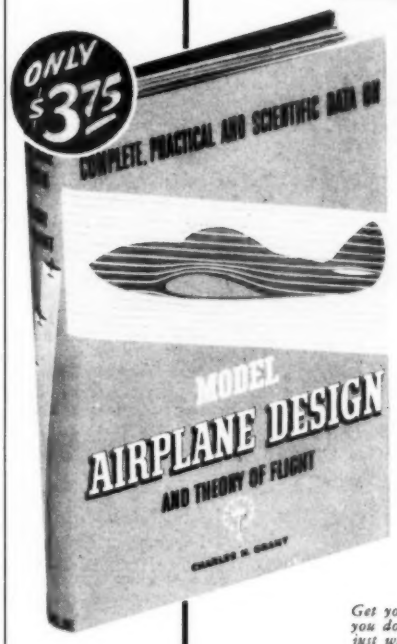
* * *

South Africa—Informed per *Flypaper* of

(Continued on page 50)

Still the OUTSTANDING HANDBOOK on

MODEL FLYING!



NOW in its 4th printing, this widely acclaimed work by the pioneer aero modeler of our age, CHARLES H. GRANT, has taught thousands upon thousands of beginners and advanced students in schools, clubs, and air force personnel on the basic fundamentals of all flight—models and large planes. . . That is why this big volume is acknowledged the "bible" among aero modelers and aviation students over the world.

THE BOOK THAT ANSWERS A THOUSAND FLIGHT QUESTIONS

—What is the best wing section to use?
—How is lift generated and calculated?
—How big should a model plane be; how much power should it have?
—At what angle should the stabilizer be set?
—What pitch is required for a given flying speed?
—How can a plane be made laterally stable?
—How to prevent spiral dives?
—What size propeller should be used? ETC. . . . ETC.

Get your copy of this complete course at only $3.75 postpaid. If you don't agree this is the finest course on model aviation and is just what you need, return within 10 days and money will be refunded in full!

AIR AGE, INC. • 551 FIFTH AVE. • New York 17

Aero Gloss

Can help YOU join this Famous Family!

Aero Gloss finished planes have been consistent winners year after year in National competitions where *appearance* is as *important* as performance.

An Aero Gloss finished plane is hot fuel proof throughout — from cement to final coat — no fear of fuel weakened joints

Aero Gloss C-77 Cement-Tube 25c
Aero Gloss Plastic Balsa-Tube 30c
Aero Gloss Model Airplane Dope-20c, 60c, $1.00

AT ALL DEALERS

PACTRA CHEMICAL COMPANY
1213 No. Highland Ave. Los Angeles 38, Calif.

DIRECTORY
For Hobby Dealers

CALIFORNIA—LOS ANGELES
Nationally advertised model planes, boats, trains, kits and supplies.
Weekdays and Mon.-Wed.-Fri. Eves.
PICO MODEL CO.
2540 W. Pico Blvd. DUnkirk 7-5894

CALIFORNIA—PASADENA
TRAINS—PLANES—BOATS
Complete Line
Kits—Tools—Supplies
Pasadena's Hobby Center
ACE MODEL SHOP
1655 E. Colorado St. SY 3-6061

CALIFORNIA—OAKLAND (11)
MECHANICAL HOBBIES
Open 9 a.m. to 9 p.m.
MODEL CRAFT HOBBY SHOP
4336 Broadway Piedmont 5-2460

FLORIDA—TAMPA
COMPLETE MODERN STOCK
Planes, Engines, Ships, Trains, Race Cars, Tools & Supplies
EVERYTHING NEEDED.
EDWARDS' HOBBIES
102 East Cass Street Phone 26-2092

ILLINOIS—CHICAGO
Model Airplanes—Tools—Engines
Model Railroads—Ships
Parts Of All Kinds
Chicago's Greatest Stock
ALL-NATION HOBBY SHOP
182 No. LaSalle St. DE 2-0850

ILLINOIS—CHICAGO
Model Airplane Engines, Kits & Supplies.
Model Railroads—Workshop Tools—Handicrafts
Over 2,000 hobby items!
BURGESS HANDICRAFT STORES
182 North Wabash Avenue
Randolph 6-3647

MASSACHUSETTS—CAMBRIDGE (38)
Model planes, motors, railroads, ships and accessories.
9 a.m. to 6 p.m. daily & Thurs., Sat. evenings.
CROSBY'S HOBBY CENTRE
1704A Massachusetts Ave. KI 7-4389

MISSOURI—KANSAS CITY
Model Airplane, Boat, Race Car, Hobby & Craft Supplies
Lionel, American Flyer & HO Trains & Accessories.
Sales & Service
NORTHEAST TOY & HOBBY CENTER
4825 Independence Ave. BE 7849

NEW YORK—BUFFALO
Model Airplanes—Engines—Boats
Handicraft—Trains—Supplies
Open Daily Except Weds.
Evenings on Thurs. & Sat.
HOWARD E. RUTH
1466 Genesee St. Taylor 4126

OREGON—PORTLAND
PLANES—BOATS—RAILROADS
RACERS—HANDICRAFT
VIC'S HOBBY SUPPLY
10 a.m. to 6 p.m.—Closed Sundays
1730 N.E. 40th Ave. GA 3108

PENNSYLVANIA—GETTYSBURG
Model Planes—Motors
Railroads, Ships & Accessories
Open daily 9 a.m. to 9 p.m.
Sun. 1 p.m. to 9 p.m.
We Trade
GILBERT'S HOBBY SHOP
230 Steinwehr Ave. Phone 1025
(On Route 15 to Wash., D. C.)

PENN.—PITTSBURGH 16, DORMONT
If it's worth selling, we have it!
TRAINS—PLANES—BOATS—SUPPLIES
MISC. CRAFTS
Open Daily & Mon., Wed., Fri. eves. 7:30-9
A. B. CHARLES & SON
3229½ W. Liberty Ave. LO 1-3068

TENNESSEE—NASHVILLE
Model Aircraft, Boats, Ships and Precision Accessories
Special Wakefield Supplies
NASHVILLE HOBBY SHOP
427 Deaderick St. Phone 5-9873

WASHINGTON—SEATTLE
GOOD SERVICE — HELPFUL ADVICE
Complete Stock
PLANES—BOATS—CARS—HO TRAINS
10 to 6 p.m. W. F. to 9 p.m.
BUZZ & DOUG'S HOBBY SHOP
701 E. Pike at Boylston EA 8650

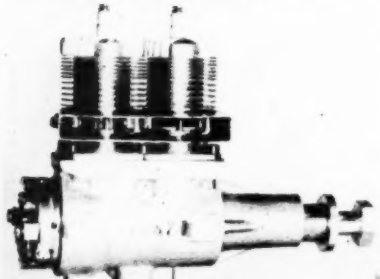
Super Detail
World War I
½ INCH SCALE FLYING MODELS
DESIGNED FOR CAMPUS CO2 OR RUBBER POWER

SOPWITH CAMEL
SPAN 14" $1.00

OTHERS AVAILABLE IN THIS SERIES
S E 5 A SPAN 13 5 16" $1.00
FOKKER DRI SPAN 11 3 4" $1.00
ASK YOUR DEALER FIRST

If Ordered Direct Please Add 10c Postage
CARTER CRAFT MODELS
16 MONTICELLO ARCADE NORFOLK 10, VIRGINIA

PAL "55"
FOR SMOOTHNESS AND POWER



Weight 15 oz.
$62.50 Ignition & Glow Plug
Displacement .55 cu. in.
$49.50 Glow Plug Only
DEALER INQUIRIES INVITED
PAL ENGINEERING LTD.
53 16TH AVE. S.W., CEDAR RAPIDS, IOWA

Nationals held in Festival City of Cape Town. Festival under way and the modelers came by the hundreds with friends and families. Seems a few relatives frowned deeply as they were hustled off home to make room for a horde of aerobods. Plenty of representation throughout the South African continent showed up. Modelers from Cape Town, Pretoria, Krugersdorp, Johannesburg, Vereeniging, Grahamstown, East London (including King Williams Town), Port Elizabeth, and Stellenbosch. Coverage here seems as good or better than at our own Nat's.

Class A rubber job KK *Competitor* flown by B. Shapiro caused an early revision of ideas re performance of beginner kit models. The model was built and finished to the 'nth degree and when flown, surprised the "tongue in cheek" flyers who knew it wouldn't stand a chance. Pete Visser's semi-*Wanderer* job copped first. The site, Pheasantekraal Aerodrome is a mighty fine place for all F.F. events. Plenty of runways and lots of flat "chase-easy" country. In the A Sailplane events, the Pretoria boys were right in there, but P. R. Herselman slid into first spot in Sr. A with 10.23 sec. flying a modified *Javelin*. Pretoria took second, third, and fourth in the event. G. Lombard of Pretoria walked away with first in A Jr., with 10.54 sec. Flew a APS *Lulu*. B rubber lads watched "Tamaties" Faasen (SRMAC) being chased left, right, and center. No sooner did he stagger back to control with a kite he had just retrieved from a "flyaway" than Pop unmercifully chased him out to put up one of his other entries. The lad did all right, collecting both Rubber B and Sailplane B championships. Interesting note in the HL Glider (Sr.) event. Robbie "Arm" Rowe heaved the job practically into the sonic barrier and won the trophy for the fourth time in a Rowe (!) Seems that a fellow with the handle of Cliff Culverwell and another chap, Doc Allan, both of Pretoria, have the speed circles to themselves. Lots of fliers were entered, but it ended in a duel between Doc and Cliff. One would set a record and the other would break it and then the cycle would start again. That's flying in A Speed, Culverwell won with 112.45 and E. Allen took second with 109.04. B speed, Allen first 128.51, Culverwell second with 126.70. C speed, first Culverwell with 113.88. D Speed, Allen with 140.56. Jet event won by J. Connacher with 128.52 mph. Everyone had a flock of trouble in the Stunt Events but in the Sr. Class, G. Matchett wound up first with D. Robertson piling up enough points to take the Jr. Class.

Team Racing was fouled up pretty well as it was the first National Team Race ever held. The lads say they will have the bugs ironed out for sure at the next Nat's. Ken Papenfus copped the TR event, winning by two laps over Gerald Matchett who was flying a class A job and getting sixty-five laps per ounce. *Sandy Hogans* and *Zeeks* took over in the FF circles, but everyone was again plagued with engine trouble. Seems the fuel situation must have been the cause from all reports. Event winners as follows: FF (A) A. E. Nissen 11:20.0; (A) Jr. G. Lombard 6:06.0; (B) Sr. K. Lucous 6:36.0; (B) Jr. D. Jander; (C) Sr. C. Wallis 4:16.0; (C) Jr. B. Schronen 1:14.0.

The Radio Control event brought out quite a few stalwarts and plenty of trouble. Seems the *Rudderbug*, after which most RC jobs are patterned, is popular in S.A. also. After a mad scramble, B. G. Pautz wound up with the first place honors. Ship was a Mac's *Robot* with a Phantom P.30 engine incorporating the Jim Walker regulator. Transmitter homemade with whip aerial, Ivy Receiver, E.C.C. relay and escapement.

The Wakefield Event is a sore spot with the South African modelers. They recommend that none of the machines seen thus far in competition be entered for a berth (this was previous to the Wakefield Meet) at the Sweden Meet. The flyers promise to sharpen their rubber flying to make a stab at the "mug" in future years. Wakefield event won by R. Rowe with 8:11.0. Dunlop rubber used. There you have the heart of the South African Nationals.

* * *

Tel-Aviv, Israel—Received a chatty letter from Heidad Abir of the *Israel Aero Club*, 67 Hayarkon St., Tel-Aviv, Israel. The lad sent a pic of his latest 1A OK powered original, 32" span, pod and boom job. All-Israel meet was held at the Magido Air Field, July 14. We'll have to wait for the results and should hear about them soon. Heidad would appreciate some correspondence from over here, so some of you letter writers get on the ball and give the Israel gang the "poop" on how you make those consistent ten minute flights.

* * *

England—Caught a good paragraph or two from *Model Aircraft* that you all (Wakefield fliers, that is) should read. Seems J. M. Fullerton has some good ideas on the subject. The

old statement "Smith was leading at the end of the second round, but his model was not retrieved in time for its last flight," should be eliminated. Not pranged either. To prevent this type of thing, Fullerton suggests a stiffening of the rules. Raising the weight to, say, ten ounces, would simply result in more rubber and performance would still be as high as ever. Solution? Maintain existing areas and cross section, and require that a payload or two, or possibly three ounces be carried, with no stipulation on all-up weight. Weight must be removable for checking. Such a move would give designers more latitude, giving them the choice between the lightest possible model or a heavier job with more rubber and the quest for aero-dynamic and structural efficiency would be encouraged. How's it sound, rubber men?

* * *

Old timer Joe Weathers came up with a new glider aptly named *Tow Morrow*, 622 sq. in. Enjoyed the dethermalizer arrangement. It is the flat-spin type. The dethermalizer trips the spring which in turn allows the rudder to flop over sideways, causing the glider to flat spin. Hope it works.

* * *

The Tenth Northern California Free Flight Council Meet was held at Mather Field, and plenty of the old "zip" went into the meet. Five minute flight times were the limit. With all of the entries, and plenty of them are top notch fliers, only one perfect trio of flights was turned in. John Tatone, member of the *San Francisco Vultures*, won the Granat Brothers trophy for high time of the day, Betty Wicker, 13 year old, showed up at the field with an AA job, fired it up like an old professional, got it up for an unofficial (half second over run), and proceeded to lose it on a thermal.

* * *

We were all deeply shocked at the untimely death of our very good friend and Contest Director, John Bollinger. His was the guiding hand in California's first attempt to stage the "big event." John was truly the modeler's friend, always helping the gang in any way he could. We shall all miss him very much.

Man at Work

(Continued from page 8)

machine entirely. But it seems that they want to fly the ship that might rack up three ten-minute hops at a meet, or not fly at all. So most of the year, they don't fly at all. Fortunately, the dubs who don't know better come out with jobs that circle and circle at low altitude, ending up on the ground and not in the trees. These fliers are plenty happy. Let's hope they don't get the contest bug. About time somebody started a free flight event with an engine loading of at least 200 ounces. With a limit on span, too. Weight keeps the ship from being hot. Weather's *Pacific Coaster*, a five-foot free flight, uses a big Orwick. Saw one at 9½ pounds in rc, that was gentle on a Triumph 51.

Depends on where you fly. Vince Ketzler, Encino, Calif., thinks a dastardly deed has been done to the 60-engined ships. "Why did they combine Classes C and D in free flight, and make it all Class C," Vince wants to know. "Fellows like myself haven't got much of a chance against a hot .31 or .32. A 60-ounce plane has to have a terrific wing area to lower the loading ratio and when you get so high it undoubtedly cuts down the speed of your climb.

"Take the *Hogans*," Vince goes on. "They are a good, fast ship and about the right weight, area, and power, but if you doubled the weight for a 60, and also the area of the wing area—

air-O PROPS
AVAILABLE AGAIN!
The finest gas model props in all the world...
—And At Lower Prices!
More official records have been held by "AIR-O" Props, than any other at one time.

AIR-O-PROPS
The "Most Wanted Props" of expert and contest flyers!

AIR-O-FLITE
6"; 7" dia. ..... 25¢
8"; 9"; 10" dia. ..... 35¢
11"; 12"; 13" dia. ..... 45¢

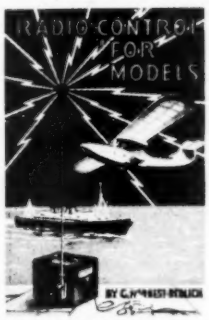
AIR-O-LINE
6"; 7" dia. ..... 25¢
8"; 9" dia. ..... 35¢
10"; 11"; 12" dia. ..... 45¢

AIR-O-STUNT
"29" 8" dia. ..... 35¢
(.29 to .33 Engines)

SOLD THRU
BERKELEY
DEALERS & DISTRIBUTORS

If no local dealer is convenient, mail orders will be filled by Berkeley Models Supplies, Dept. MA, West Hempstead, N. Y. Please include 25¢ packing & postage.

RADIO CONTROL FOR MODELS



SOME OF THE CONTENTS — "Radio Control for Models" written by G. H. Redlich, expert radio development engineer, is written in a manner that all can understand. The Author has successfully piloted a model across the English Channel via radio control, has displayed his aircraft etc. to British Air Force & military experts all over Europe. Good Brothers of U. S., Pepin of France & other experts are all represented in this book. Totals 128 pages, 14 chapters, high quality paper and excellent binding. Hundreds of new, different ideas are shown, measurement of amps, insulators, magnets, shielding etc., all the important things you need to know to build your own set or to keep a purchased set in top operation condition. Escapements with 2 to as many as 12 operations shown, over 175 photos & circuits are given for sets, use of electric motors for control, solenoids, delayed action relays, mechanical movements, beep box used by Good Brothers, boat layout with forward, reverse, stop and half speed controls. Scaled down drawings are given for "Rudder Bug," ½ A "Queen Bee" and "Jige 21" radio controlled powered glider by Pepin of France. Complete trouble shooting information for senders, receivers etc. Here is a book you will use in your workshop and on the field with your models. Quality from cover to cover. Yours for a better knowledge of the many problems of Radio Work. . . .

OVER 10,000 RADIO BOOKS NOW SOLD, PROFIT FROM THE EXPERIENCE OF OTHERS WHO HAVE BEEN EXPERIMENTING FOR YEARS. 27 M C BAND NOW LICENSE FREE FOR MODEL WORK.
PRICE ONLY $2.98 MONEY BACK IF NOT SATISFIED. . . .
FULL SIZE PLANS GOOD BROTHERS "RUDDER BUG" $2.75

ADD 10c POSTAGE BOOK ORDERS OR WE ACCEPT C. O. D. — SPECIAL SEND 25c FOR THREE COPIES "AEROMODELLER" (Year Subscription $4.50 Book Lists and Model Cat. all worth $1.27
GULL MODEL AIRPLANE CO. 10 EAST OVERLEA AVE., DEPT. M-5 BALTIMORE 6, MARYLAND

15 Fifteen Famous Fighters 15
SOLID SCALE MODEL KITS

Jam-packed with metal castings, every little detail visible in the actual airplane — every single item that can be reproduced — is given to you.

DYNA-MODEL'S NEW JETS

F-86 SABREJET	$2.75		
F-84 Thunderjet	$2.75	F9F Panther	$2.75
MiG-15	2.75	F-80 Shooting Star	2.75
British Spitfire	$2.75	P-51 Mustang	$2.75
FW-190 Focke Wulf	2.75	F6F Hellcat	2.75
P-40 Warhawk	2.75	F8F Bearcat	2.75
F4U Corsair	2.75	P-38 Lightning	3.50
ME-109 Messerschmitt	2.75	P-47 Thunderbolt	2.95

DYNA-MODEL PRODUCTS COMPANY
76 SOUTH STREET, OYSTER BAY, NEW YORK

4 TOOLS IN 1
METAL WORK SHOP FOR HOME AND PLANT

IT
INTRODUCTORY PRICE
Only $6.95
DELIVERED

Ideal for hobbyists, craftsmen, repair shops, garages, model mfgrs., experimental labs, etc. Handles metals up to ¼" thickness depending upon hardness. Shipped complete with ⅛", 3/16" and ¼" punches and riveting dies. Check or money order must accompany order. No C.O.D.'s. Money will be refunded if not fully satisfied.

ALBERT J. TATU CO.
85 Columbia Dr. Dept J Williamsville 21, N. Y.

PLENTY OF PARTS

FOR

SUPER-CYCLONE

ON HAND AT ALL TIMES

Get genuine Super-Cyclone Engine parts from your local dealer. If he does not have them send us your order and your dealer's name and address.

WRITE US NOW

NEW LOW PRICE

NOW ONLY $12.95 AT YOUR DEALER

DEALERS

Stock up now . . . with genuine Super-Cyclone parts and develop greater value in increased service volume.

CONTACT YOUR LOCAL JOBBER

SUPER-CYCLONE, INC.

GRAND CENTRAL AIR TERMINAL
1310 AIRWAY
GLENDALE 1, CALIFORNIA

1,400 sq. in. would be too much. What are they trying to do? Get rid of big engines entirely and have us flying 'toys'? I'm sure there are lots of fellows who feel the way I do?" Are there?

▸ New rc fans, attention! When you fill out form 555, don't state that your transmitter is Type Approved. It is not Type Approved so the form will be returned to you by the FCC as being improperly filled out. The proper answer is "No." This applies to transmitters assembled from construction kits. Don't be afraid to write "No" as an answer to that particular question, because it's "legit." And if you have been burning out crystals, one manufacturer advises not to operate the transmitter with the antenna off.

For the R. C. Fan

(Continued from page 27)

through a second high resistance type relay of the Sigma 4F 8000 ohm type. A delay condenser is wired across the relay and by rapid pulses of the transmitter switch, four to eight pulses, the relay can be made to close, thereby operating an escapement type of fuel line control relay. This system has the advantage of being able to select high or low speed for all control positions but is much heavier than the single cam set up.

The use of the air control shown in the photos greatly adds to the selectivity of speeds by being able to pre-set the high speed to the desired point by screwing the adjustable bolt up or down, thus opening or closing the air intake slots. This device could also be used for engine speed control for glow plug engined free flight planes.

The intake tube is made from a piece of 1/2" aluminum tubing or copper gas line. Tubing is selected that has a 5/32" hole or solid stock is drilled to this size. The external section is cut to fit the inside of the regular intake tube of the motor used. Make this section long enough to project past the hole for the conventional jet. Drill a hole through the new tube at the former jet location. This jet, when installed, will retain the tube in place. A second hole is drilled about 1/2" away from the first hole to fit the new two speed jet. Any type of replacement jet may be used. A second piece of tubing is soldered to the jet body at a slight angle to the tube just outside of the intake tube as shown in the photographs. A hole is drilled through the inside of this additional tube into the passageway of the original jet. All chips are removed and the tube is installed in the former intake of the engine. If the use of the two-speed jet is not desired, screw the needle valve closed and the additional jet will not interfere with conventional operation. It is pointed out that the reduced air intake area will affect engine speed only slightly as will be demonstrated by the amount the speed control screw will have to be screwed in to control engine speed. The inside of the tube is threaded with a 10-32 tap about one inch down before cutting air slots. Slots are cut in the end of the tube from 1/4" to 1/2" deep. All slots can be made different depths by holding the saw at an angle when making the cuts. After slots are cut, squeeze the ends together slightly to put a bind on the threads of the adjustment screw which is a 3/16 or 10/32 screw long enough to completely close the slots when screwed all the way in. The slots and use of the screw may be omitted if intermediate settings of high and low speeds are not desired.

The Control Research or Bonner Specialty escapement relay may be used for the control relay. It is not necessary to use the escapement portion and these parts may be removed. A

ADVT. INDEX—OCT., 1952

Ace Products 41
Allyn Sales Co., Inc. ..... 3rd Cover
American Telasco, Ltd. 41
America's Hobby Center, Inc. 6, 7, 9
Mel Anderson Mfg. Co. 4
Arnold & Fox Engineering Co. 43
Atwood Manufacturing Co. 8
Berkeley Models, Inc. 51, 53, 54, 55, 56
Carter Craft Models 50
Cleveland Model & Supply Co. 44
Comet Model Hobbycraft, Inc. 1
Consolidated Model Engineering Co. 47
Constructo Nautical Miniatures, Inc. 46
L. M. Cox Mfg. Co., Inc. 39
Dealer Directory 50
DeBolt Model Engineering Co. 45
Duro-Matic Products Co. ..... 4th Cover
Dyna-Model Products Co. 51
Fox-Shulman Publications, Inc. 42
Francisco Laboratories 52
Gotham Hobby Corp. 54
Guillow, Paul K. ..... 2nd Cover
Gull Model Airplane Co. 46, 51
Herkimer Tool & Model Works, Inc. 3
Ideal Models 46, 55
KENHI Model Products 37
Mod-Ad Agency, The 6
Mod Kraft Co. 48
Monogram Models, Inc. 10
National Model Distributors 46
PAL Engineering Ltd. 50
Pactra Chemical Co. 49
Sterling Models 42, 43
Strombeck-Becker Mfg. Co. 46
Sullivan Products 8
Super-Cyclone, Inc. 52
Albert J. Tatu Co. 51
Testor Chemical Co. 28, 29
Top Flite Models, Inc. 33
X-acto Crescent Products Co., Inc. 48

if YOU PAY MORE THAN 75¢ PER PINT FOR RACING FUEL—

You Certainly Deserve

francisco fuels

PROVEN QUALITY

In all recent tests, Francisco Fuels have received the highest all-around rating for purity and performance — and the least amount of detriments.

POWERMIST • SPITFIRE
BLUE BLAZER
* FUEL OF THE CHAMPIONS

FROM THE WORLD'S FIRST, LARGEST, BEST EQUIPPED RACING FUEL LABORATORIES

FRANCISCO LABORATORIES

small tab or extension is soldered onto the armature or the pawl and a piece of wide rubber band or rubber sheet is cemented to this piece to seal off the end of the air bleed tube when the relay is activated. If rubber tubing is used for an air bleed line, this piece of rubber is not necessary as the metal to tube fit can be close enough to cut off the air intake. A gap of 1/8" should be maintained between the end of the tube and the armature when the relay is not energized to permit a free flow of air for high speed operation. The coil may be used as is but rewinding with No. 32 to No. 34 wire will reduce battery drain. The Bonner Specialty relay will operate on 1-1/2 volts but three volts will give more reliable operation.

The cam on the original escapement shaft is a piece of 1/8" outside diameter brass tubing 1/2" long slipped over the shaft and soldered in place to position the lobe of the cam to close the actuating points at one of the neutral positions. The actuatory points can be made from two strips of hard brass 1/4" wide and one inch long. Insulate the strips from each other by installing in slots in a fiber or micarta or wood block and solder a lead to each strip. Install in position for cam to close the points in the desired neutral position. Three-volt battery is in series with the points and the control relay.

There is enough delay in speed change action to pass through the low speed if change is not desired. Check batteries occasionally to insure proper action.

This system will give very excellent two-speed control at very little additional weight and for no extra radio equipment. It is very possible to do "touch and go" landings and to also maintain any desired altiude by selection of low or high speed. A diagram is illustrated of the second system using an additional Sigma relay and four lobe cam as described above for a more complete control but the extra weight restricts its use to airplanes of six foot spread or more and operation is not as positive.

Classy

(Continued from page 20)

The wing is mounted flat on top of the fuselage. The elevator has 3/32" positive incidence. No turn is built into the rudder since the turn is ably controlled by the rudder tab. Be doubly sure that the elevator is mounted straight ahead or it will act as a rudder and give plenty of trouble in adjusting.

All joints should be covered with several coats of cement for maximum strength. Use plastic wood for strong stab and wing fillet. For finish, brush in three coats of sanding sealer and polish down, after the last coat, with 400 wet-or-dry paper, using plenty of water. If you have a little extra spare time you may now add a colorful trim job. The original model was trimmed in black with red, white, and blue stripes on the wings.

Now, pick up the glider in your hand as if you were going to throw it and decide where you want to hook your index finger to get that extra oomph on that throw. Some fellows, depending upon the individual style of throw and size of hand, like to grip their models differently. Some modelers cut a finger hole at the wing junction, others attach an index finger hold from 1/4" sheet onto the side of the fuselage. If your hand is big enough you may like to hook your index on the rear of the fuselage. Still others like to cement coarse sandpaper along the fuselage sides for a good grip.

Add a little modeling clay to the nose and try some test glides, adjusting the quantity of clay until a long smooth glide is obtained. Adjust the rudder tab until you get a smooth, fairly tight, left circle. Launch directly into the wind.

Berkeley's "MIGHTY-4 MIDGETS"...

Models that put the "Flying" in Flying Models—

OUTFLY OTHERS IN THEIR CLASS BY BETTER THAN 5 TO 1

In actual flight tests certified by an A.M.A. Contest Director*—

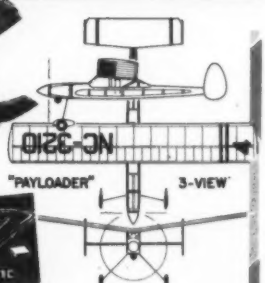
MODEL	PRICE	TYPE	BEST DURATION
"A"	50¢	SCALE	:03.0 SEC.
"B"	59¢	SEMI-SCALE	:07.0 SEC.
"C"	50¢	SCALE	:04.2 SEC.
	59¢	SCALE	:05.5 SEC.
	59¢	SCALE	:02.0 SEC.
MIGHTY MIDGET	59¢	"BANDIT"	:39.8 SEC.
MIGHTY MIDGET	59¢	"PAYLOADER" WITH 5/16 OZ. LOAD	:28.0 SEC.

"DRAGON" 14" Span semi-scale biplane—Climbs fast even on low power. Wings are slotted for struts.

"PAYLOADER" 18" Span weight-lifter carries 5/16 oz. dead weight for almost ½ a minute. See chart above!

THE "V-16" 13½" Wingspan Goodyear type butterfly stabilizer design. Opposed twin dummy cylinders.

"BANDIT" 15" Wingspan fast midwing sport flyer — Still climbing almost straight-up at the 100 ft. mark.



Here is what Every Kit Includes:

Only 59¢

and—

EVERY KIT INCLUDES GENUINE U.S. T-56 RUBBER POWERPLANT

SOLD THRU BERKELEY DEALERS & DISTRIBUTORS

IF NO LOCAL DEALER IS CONVENIENT, MAIL ORDERS WILL BE FILLED BY BERKELEY MODEL SUPPLIES, DEPT. MA, WEST HEMPSTEAD, L. I., N. Y. PLEASE INCLUDE 25c PACKING AND POST.

1952 CATALOG NOW AVAILABLE - 25c. At your dealers, or write direct!

Polio Pointers FOR 1952

1 Avoid fatigue from work or play.

2 Don't get chilled. Don't swim too long in cold water nor sit around in wet clothes.

3 Don't mix with new groups. Don't take children out of camp where there is good health supervision.

4 Watch closely for signs of illness — headache, fever, sore muscles, stiff neck or back, trouble in breathing or swallowing.

5 Put a sick person to bed at once, away from others, and call your doctor. Follow his advice.

6 Contact your local March of Dimes chapter for whatever assitence or financial help you may need.

Recommended by THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

Berkeley's NORTH AMERICAN AJ-1 "SAVAGE"

U. S. Navy Atom Bomber!

$6.95

Carved & Hollowed Fuselage!
Carved & Hollowed Nacelles!
Five Metal-Hub Rubber Wheels!
Complete Decals!
Embossed Bubble Canopy!
Deep-Drawn Metal Engine Cowls!
Shaped Leading & Trailing Edges!
Die-Cut Ribs, Bulkheads, Etc.
Genuine Jim Walker "U-Control"!

This is the ultimate in scale model controliners. Power it with two gas engines up to .099, and a Jetex Jetmaster "150" as a "Stinger" in the tail for extra high speed boost, just like the real "Savage". Kit includes arresting hook for Carrier Event landings. Fly high speed on all three engines, fly low speed on one engine to win in high-low speed contests.

FOR TWIN ENGINES PLUS JETEX...PERFECT SCALE! Two .045 to .099 Engines, and Jetex 100, 200, or new Jetmaster 150 unit. Adjustable balance!
(Jetex unit for reserve power & scale effect)

27" Wingspan—⅜" Scale (from factory plans)
(No deviations from scale on this model)

"CHAMPIONSHIP" "1/2 A" FLYING SCALE

FULL ONE-INCH SCALE

No models at any price can equal the sound value found in these great kits. Designed for free-flight flying they may be powered with .035 to .049 gas engines, O.K. CO_2 or rubber power. As a controliner it can take engines from .049 to .099 displacement.

$1.95

STINSON VOYAGER "150"
34" Wingspan
Equipped with Wing Slots. A beautifully detailed model of America's most popular 4-place airplane

$1.95

AERONCA SEDAN
34" Wingspan
Newest addition to this line, it can be flown as a land or seaplane. Material is included for a landplane only.

$1.95

National Champion in 1946 and 1948
2nd & 3rd in 1951 Nationals-Open!
STINSON SENTINEL L-5
33½" Wingspan
Here is the model that won the 1946 and 1948 Wichita and Olathe Nationals. A commercial version of the Army's famous "Flying Jeep"

$1.95

West Coast Champion "½A" Scale Gas!
PIPER SUPER-CRUISER
33½" Wingspan
First light plane to fly around the world. Plans show details for making seaplane floats. Landplane material included in the kit.

$1.95

FAIRCHILD 24 "RANCHER"
36⅝" Wingspan
This beautiful light plane design is the largest in the series. Stable characteristics make it ideal for free-flight.

$1.95

CULVER "V"
29" Wingspan
This popular sport plane is ideally suited for control-line conversion. A tricycle landing gear aids in landings.

$1.95

CESSNA "140"
32⅛" Wingspan
Every old-timer knows that a Cessna is a great flying scale model. The new "140" lives up to reputation.

$1.95

National Champion in 1941 and 1951!
INTERSTATE CADET
35" Wingspan
Henry Struck won the 1941 National Flying Scale Championships with the beautiful flying qualities of the Interstate Cadet.

If no local dealer is convenient, mail orders will be filled by Berkeley Models Supplies, Dept. MA., West Hempstead, N. Y. Please include 25¢ packing & postage.

SOLD THRU **BERKELEY** DEALERS & DISTRIBUTORS

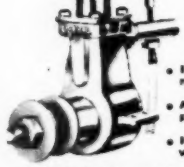
Berkeley's 1952 CATALOG
Completely revised — up to date! Contains complete line of kits, Supplies, Accessories, Information. **25¢**

A little experimentation will determine the degree of bank at which to launch the model for a good pull out on top of the climb. The original flew best when launched at a 45 degree angle to the right, then made an "S" smoothly into a tight left glide. If your glider climbs fast but at too shallow an angle, then add a little incidence in the elevator. If you are southpaw use turn adjustments opposite of the above.

Pen-Pals

Frank Gross, 1809 Ezmirlian St., Campton 2, Calif., has an Orwick 64 plus $5.00 which he will exchange for a Dynajet Redhead . . . H. M. Feely III, 178 Beaver St., Beaver, Penna., will trade his Torp .035 for any .045 to .099 engine . . . Pete Cartagena, 19 W. 111 St., N. Y. 26, will give a Jetex 50 or 100 for a Campus Bee or Buzz CO^2 engine . . . Joseph Jackan, Route 1, Wisconsin Rapids, Wisc., wants a K & B Infant or Torp Jr., for his cub .049 . . . Lawrence Eads, 5011 Ave. H, Austin 5, Texas, will exchange his Cub .049 for a Royal Spitfire .065 or Cub .074 . . . Richard Smith, 512 Broad St., Warrensburg, Mo., has a new McCoy Redhead 60 which he will trade for a Triumph .49, .51, or Super Cyclone. He also will give his McCoy .098 for a Cub .099 or Arden .099 . . . Merry Johnson, 1304 Aberdeen Ave., Aberdeen, Wash., wants a Wasp .049 or Baby Mac for his Cub .047 . . . W. Dohlyren, 935 G. Harper, Chicago, Ill., has two Thor .29's to give away for two Rev Up 1" spinners . . . Henry Perez, 120 E. Adams, Los Angeles 11, Calif., will exchange his Baby Spitfire for any model airplane engine . . . John Markham, 116 Greenwood Rd., Middlesboro, Ky., wants to trade his Super Champion 60 for a Cub .049 . . . Ed Johnstone, Jr., 2325 Hart St., Dyer, Ind., is willing to pay cash for a Campus 29 . . . Peter Rabinovitch, 46 McKinley Ave., Norwich, Conn., has a Herkimer OK CO^2 which he will give for a Half A engine . . . James Dech, 713 Academy St., Valparaiso, Ind., wants to exchange a Keydet kit for a Half A Zeek . . . Josef Rosman, Knutzet Eltrim, Doar Na Negev, Israel, will give a McCoy .09, .19, .29 or Atwood Triumph .49 for either Forster, K & B Torpedo, Arden .099, 19, Ohlsson .19, .23, or 29 ignition types . . . James Belander, Route 2, Box 276, Hood River, Ore., would like to sell, or exchange for an .045 Baby Spitfire, his .045 Spitzy.

Graham J. Heatherley, 414 Marine Parade, Wairoa, H. B., N. Z., wants a pen pal interested in speed models . . . 14 year old Clive Lambert, 9 Kammond Ave., Seaford, Sussen, England, is looking for a pen pal . . . Also, Edward Soltis, 57 Morningside Ave., Yonkers 3, N. Y. . . . Ian Smith, Milburn Otago, N. Z., wants to write to a girl interested in control line scale and speed . . . Michael G. Cash, 54 Gatehouse St., Parkville, Melbourne, Vic.,



Our 539th Advertisement
REAL DIESEL ENGINE!
$2.95 You can't beat this price!

- Ideal for planes, boats, midget cars
- Actually runs at 7500 RPM, produces 1/7 HP
- Height 4 full 3-1/2 inches; weight 8 ounces

MAYBE WE'RE CRAZY, giving away a precision diesel engine, with cylinder and piston, carburetor, crankshaft, connecting rod, etc., for ONLY $2.95. But we're selling thousands of DEEZILS all over the world, and that keeps our production costs down. DEEZIL is streamlined, compact and easy to install. Runs for years! Fast delivery if you ORDER DEEZIL today!

SEND $2.95 plus 25c postage
GOTHAM HOBBY CORP.
107 E. 126th St., New York 35, N. Y.

Australia, wants to correspond with a modeler. Harry C. Brown, 345 Lafayette St., Bristol, Pa., would like a Canadian pen pal . . . David Williams, 118 So. Dubuque St., Iowa City, Iowa, will write to anyone interested in planes of the 1900-1905 era.

E. G. Lawrence, 14 Elm Park, Brixton Hill, London S. W. 2, Eng., wishes to correspond with someone who will exchange plans . . . Leslie Sourgen, 25 Victoria St., Rosettenville Ext., Johannesburg, Transvaal, So. Africa, wants plans for the Little Stinker and a 14 year old pen pal . . . K. Came, Okauia, R. D., Matamata, N. Z., will exchange plans from Australia, N. Z., or the Aeromodeller, for the Sandy Hogan . . . Stephen Newman, 62 Manor Day, Petts Wood, Kent, Eng., wants to trade British plans for U. S. plans . . . Gunter Striewisch, Gutersloh, I. W., Surenhofsweg 105, Germany, has plans for a special experiment.

Gerard Beauchamp, 10556 Rancourt, Montreal 12, Canada, has MAN issues for trade.

FULL-SIZE WYLAM PLANS AVAILABLE

50¢ EACH, POSTPAID

8-34	Polish Fighter
5-35	Curtiss Export Falcon
8-35	Swift P-31
11-35a	Curtiss Seahawk XF7C-3
11-35b	Lycoming R-680 Engine
1-36a	Fokker Pursuit Model D-16
1-36b	Wedell Williams "57"
2-36	Consolidated A-11
5-36	Northrop X-A-13
7-36	Curtiss A-12 Strike
11-36	Wiley Post's Winnie Mae
7-37a	Curtiss Hawk 3C Gen. Arrangements
7-37b	Curtiss Hawk 3C Wing Details
7-37c	Curtiss Hawk 3C Fusel. & Control Detail
10-37	Curtiss XF13C-1 and XF13C-2
12-38	Waco Model D-6
5-39a	Chance Vought V-143, 3 View Assembly
5-39b	Chance Vought V-143, Spec. Lay. & Sect.
5-39c	Vought V-143, Gen. Arr. & Hookup
11-39a	USA Douglas O-46A, Gen. Arr.
11-39b	USA Douglas O-46A, Access. Det.
11-39c	Douglas O-46A, Fusel. & Wing Det.
11-39d	USA Douglas O-46A, Crossections
12-39a	Grumman F3F-1, 3 View Assembly
12-39b	Grumman F3F-1, Layout
12-39c	Grumman F3F-1, Spec. Details
12-39d	Grumman F3F-2, Changes from F3F-1
11-40a	Seversky P-35 Layouts & Crossections
11-40b	Seversky P-35 3 View Plans & Details
2-41a	Spitfire II, Layout Plan & Details
2-41b	Spitfire II, 3 View Outline & Details
4-41a	Waco C-6, 4 & 5 place cabin
5-41a	Messerschmitt 109J, Lay. Plans & Details
5-41b	Messerschmitt 109J, 3 View Out. & Det.
8-41a	Curtiss SBC-3 Layout Plans & Cross.
8-41b	Curtiss SBC-3, 3 View Out. & Det.

AIR AGE, INC. • 551 FIFTH AVE. • N. Y. 17

IT'S NEW! BUILD ONE TODAY

Ideal MODELS

AQUA PAL Skiff

16 INCH

No 1530

CAN BE POWERED WITH A TINY ELECTRIC MOTOR OR AN OUTBOARD MOTOR

Ideal is first again with the "Aqua Pal" Skiff. Completely pretabricated with die cut oar blades, panels, bow plates, seats, etc. Two molded balsa sides. Cast oar locks and horns. Step-by-step picture plan

$1.50 COMPLETE

• SEE YOUR DEALER TODAY!

IDEAL MODELS

20-24 WEST 19th ST., NEW YORK 11, N. Y.

FOR MODELERS WHO DEMAND AUTHENTIC PERFORMANCE

Berkeley SCALE Controliners

Complete Kit— $4.95

NORTH AMERICAN AT-6 "TEXAN"

(U. S. Navy Designation SNJ-5)

Wingspan—¾" scale—For "19" to "33" Engines

The "T-6" has been taught more people to fly than any other airplane. Hundreds of thousands of pilots who flew this plane will thrill to see this model perform. Beautiful to look at and easy to handle. With its stunt airfoil, it can do everything in the rule book.

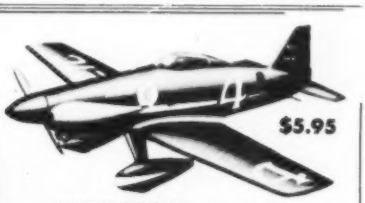
KIT FEATURES:
DEEP DRAWN METAL COWL
MOLDED PLASTIC BUBBLE CANOPY
COLOR DECALS FOR USAF OR USN
"CLEAN CUT-OUT" BALSA PARTS
SHAPED LEADING EDGES
SHAPED TRAILING EDGES
SIMPLIFIED FUSELAGE ASSEMBLY
COMPLETE METAL HARDWARE
RUBBER WHEELS "U-CONTROL"

$4.95

Grumann "F-8-F BEARCAT"

35½" Wingspan—For .29 to .65 Engines

Features "Autotrol" rudder operation, eliminating slack control lines in critical maneuvers.



$5.95

"MINNOW" Cosmic Wind

28" Wingspan—For .09 to .36 Engines

This 1½" scale Goodyear racer features "Step Keel" construction. Meets Team Racing rules.

$5.95

North American "T-28"

30" Wingspan—For .23 to .36 Engines

This new Air Force trainer makes a perfect stunt-scale design. Tricycle gear, pre-fab.

$5.95

CESSNA "195"

36" Wingspan—For .19 to .49 Engines

This beautiful 1" scale controline lightplane kit is pre-fabricated. Features "Step Keel."

$4.95

Republic "P-47 THUNDERBOLT"

40¾" Wingspan—For .29 to .65 Engines

Engine throttle control, fully automatic wing flaps, shear-pin mounts and die-cut parts.

$4.95

Betty Skelton's "PITT'S SPECIAL"

25½" Wingspan—For .19 to .33 Engines

Authentic pre-fabricated Controline design of the famous National Aerobatic Champion.

$5.95

North American "P-51 MUSTANG"

37" Wingspan—For .19 to .36 Engines

Features retractable-extensible landing gear, throttle, flap, elevator and rudder control.

Berkeley's 1952 CATALOG... 25¢

Completely revised — up to date! Contains complete line of kits, Supplies, Accessories, Information.

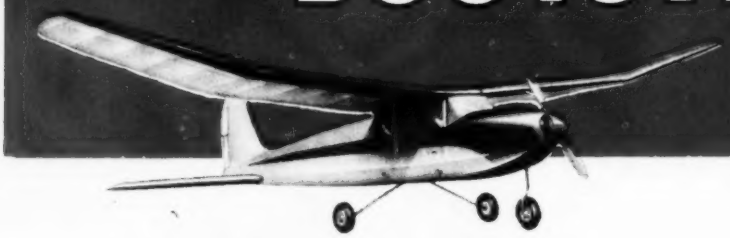
SOLD THRU BERKELEY DEALERS & DISTRIBUTORS

If no local dealer is convenient, mail orders will be filled by Berkeley Models Supplies, Dept. MA., West Hempstead, N. Y. Please include 25¢ packing & postage.

For Radio Control . . .

Free-Flight . . . PAA-Load!

Berkeley's BOOTSTRAPS "A-RC"



52' NATIONALS BULLETIN:
BERKELEY DESIGNS WIN MORE PLACES THAN ALL OTHER COMMERCIAL DESIGNS COMBINED! PIPER SUPER CRUISER WINS SCALE "1/2A" OPEN ... INTERSTATE CADET WINS JUNIOR AND SENIOR...

BOOTSTRAPS "A-RC"

54" Wingspan — 36 oz. Total Weight- (with batteries and radio unit) **For Engines .09 to .14 Displacement**

$3.95

Kit Features:
- Complete Pre-fabricated and Die-Cut Wood!
- Die-Cut Windshield!
- Covering Material!
- Formed Landing Gear and Complete Hardware!

- **Removable Radio Unit!**
- **Tri-cycle Gear!**
- **Split Rudder for Trim and Radio Control!**

Designed by Henry Struck, former National Champion and designer of dozens of championship models. This is his latest and best . . . the result of many years of consistent test and improvement. The tri-cycle landing gear gives easy ground handling. The split rudder allows ease of adjustment for all flight conditions. The radio unit can be removed, complete with batteries for easy bench testing and checking.

RADIO & PAA-Load Designs . . .

$4.95

Pre-fabricated Kit — **$1.95**

"SUPER BRIGADIER"

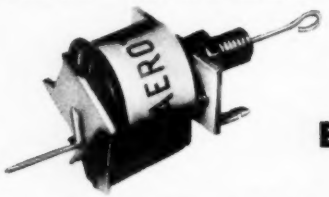
58" Wingspan—For .19 to .36 Engines

Especially designed by Henry Struck for Radio Control and PAA-Load flying. Plans show details for installation of equipment. Pre-fabricated.

BRIGADIER "R. C.-38"

For .035 to .099 Engines—38" Wingspan

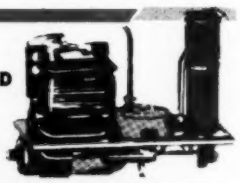
This completely re-designed "½ A—A" Free-Flight may be flown as a Radio Control job, a PAA-Load model, or a free-flight Sport Flyer. Plans include Radio Control and PAA-Load installation details. The kit is pre-fabricated with formed gear, die-cut balsa and plywood parts, hardware and notched trailing edges.



Super Aerotrol
ESCAPEMENT
$3.95

Entirely new and different! Rugged yet compact. Single hole mount. Draws 2 to 5 times less current. Operated by rubber power, it will deliver at least twice the control operating force of other escapements without "skipping." Completely self-neutralizing, it returns the control to neutral after the signal stops.

27 m.c. CRYSTAL-CONTROLLED
RADIO CONTROL



"SUPER AEROTROL"
NO OPERATORS LICENSE REQUIRED!

First Transmitter You Can *Build, Operate, Maintain* Yourself!

DUST-CORE TUNED Super Aerotrol RECEIVER

- Operates on either 27.2 or 52 mc. • NEW super-sensitive relay.
- NEW "locked-channel" dust-core tuning. (We have shipped the sample receivers across the country and to Europe without the frequency changing!
- Light in Weight, 2¾ oz. less batteries.
- Simple super-regenerator circuit, 100% dependable.

Kit includes: Finished, tested sensitive relay; finished dust-core tuner; drilled bakelite base with condensers and eyelets attached; all electrical components, condensers, resistors, coils, chokes and potentiometer; all necessary contacts, and color-coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included.

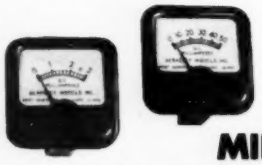
Kit— **$13.95**

Crystal-Controlled Super Aerotrol TRANSMITTER

- Completely portable—Self contained—No separate antenna—No external Batteries! • Operates on 27.255 mc. • Weighs 3.5 lbs.

Kit includes all necessary parts (except tube and batteries): Precision Ground Crystal; Painted Metal Cabinet; Finished Sectional Antenna; stamped and formed chassis with all holes punched; all necessary components, resistors, condensers, coils and chokes; color coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included—

Kit— **$21.95**



Super Aerotrol
MILLIAMETER

Low in cost, manufactured specifically for use with Super Aerotrol equipment. O-3 Milliameter for use with Super Aerotrol Receiver. O-50 Milliameter for use with Super Aerotrol Transmitter.

O- 3 Milliameter $3.50
O-50 Milliameter 2.75

Still Available!

DE-Aerotrol (for 52 mc.) Complete Kit—**$22.95**
Includes Transmitter, Receiver, Escapement (less batteries and tubes).

XFG-1	Receiver Tube	$3.50
3A5	Transmitter Tube	3.50

SOLD THRU
BERKELEY
DEALERS & DISTRIBUTORS

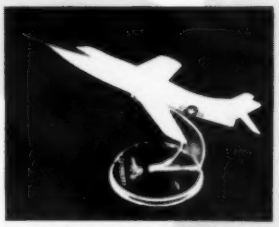
*Prices and specifications subject to change.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. MA., West Hempstead, N. Y. Please include 25¢ packing & postage.

Berkeley's 1952 CATALOG . . . 25¢

8 Beautiful PLASTIC SCALE MODEL KITS TO CHOOSE FROM

These exact scale model kits are perfect replicas of famous Douglas and Boeing planes that are taking off and landing on air strips the world over.

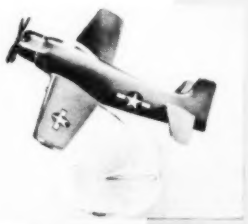


DOUGLAS NAVY SKYROCKET

Revolutionary research craft designed and developed for U.S. Navy at Douglas' El Segundo Plant. **$1.79**

DOUGLAS C-124 GLOBEMASTER

Heavy-duty, all purpose transport. Perfect reproduction of this aerial giant of the USAF. **$2.49**

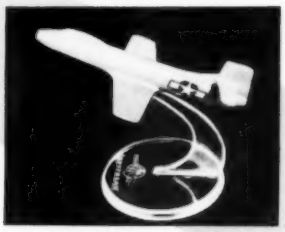


DOUGLAS NAVY SKYRAIDER

The Navy's carrier-based attack bomber. The AD Skyraider is believed to be the most efficient and versatile airplane of its type. **$2.49**

BOEING STRATOCRUISER

The double-deck Boeing Stratocruiser, "queen of the air-lanes," is the fastest most luxurious airliner ever put in service. **$2.49**



DOUGLAS NAVY SKYSTREAK

This is the radically advanced airplane that captured two world's speed records in 5 days **$1.79**

All Allyn model kits are built true to scale and color and are complete with decals of insignia. Easy to assemble, these models are adorning boys' rooms, offices, dens and club houses everywhere. There are eight to choose from . . . but you'll want them all. *See your nearest dealer for complete selection.*

BOEING B-47 STRATOJET

The swept wing Boeing B-47, the world's fastest jet bomber, has proved itself to be outstanding in performance. **$2.49**

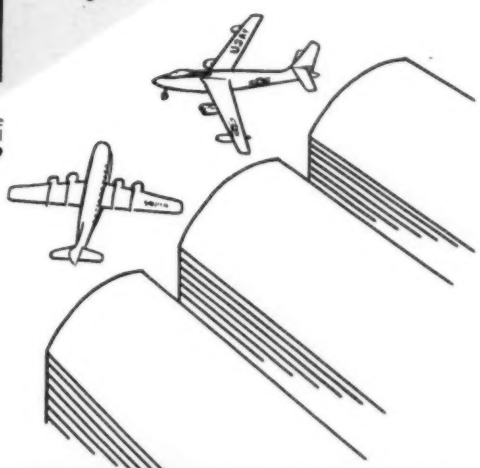
"THE CHOICE OF THOSE WHO WANT THE BEST"

DOUGLAS NAVY SKYKNIGHT

A fast, long-range fighter, adaptable as an attack fighter, long-range patrol or reconnaissance plane or long-range fighter escort. **$2.49**

BOEING STRATOFREIGHTER

The Boeing C-97 Stratofreighter, holder of the transcontinental speed record for transports. Serves as a tanker refueling in the air. **$2.49**

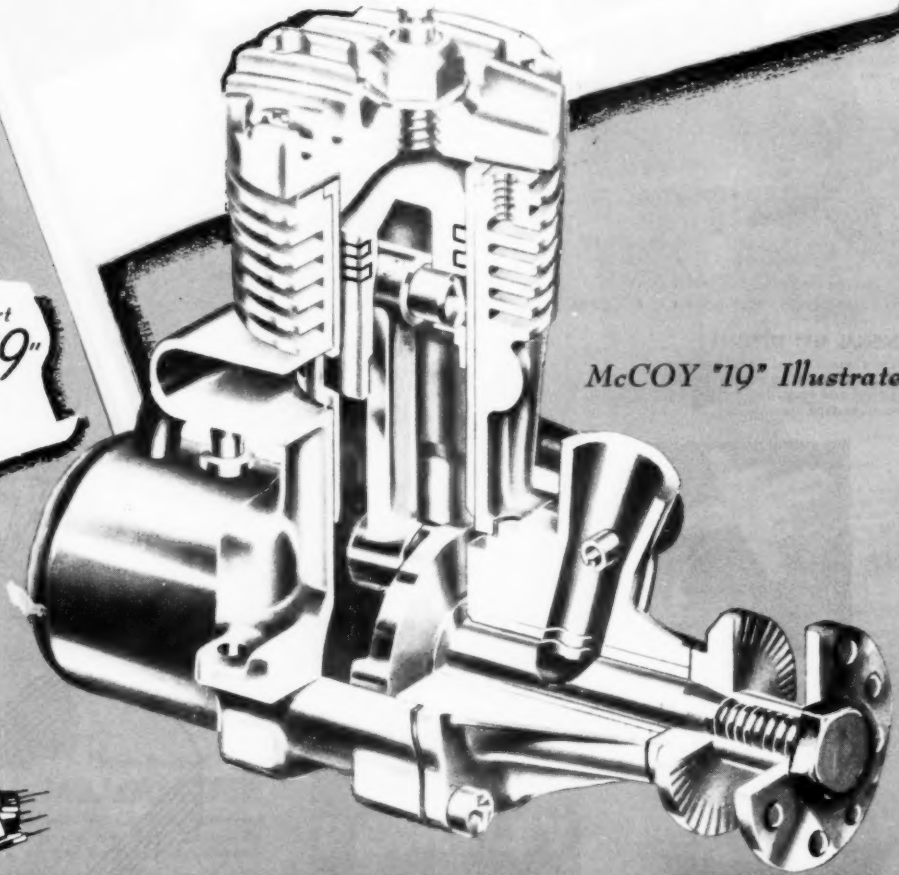


Allyn SALES CO., INC. • 6425 McKINLEY AVE. • LOS ANGELES 1, CALIF.

DURO-MATIC

McCOY

Power your next model with
the McCOY "19" Front Rotor Sport Engine
Made to order for the active modeler
who wants reliable performance in ALL types
of Sport Flying. The finest workmanship possible
assures you many hours of carefree flying with
—the easiest starting engine ever built!



McCOY "19" Illustrated

Front Rotor Sport
McCOY "19"
$9.95

DURO-MATIC PRODUCTS COMPANY
8509 HIGUERA STREET
CULVER CITY, CALIFORNIA